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THE

NORTHWESTERN MILLER

A Weekly Record of Current Milling Events, and Journal of the Flour and Grain Trades.

VOLUME 16. NUMBER 8

MINNEAPOLIS, MINN., FRIDAY, AUGUST 24, 1883.

$2.00 PER YEAR. 5 CTS. PER COPY

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REMEMBER

Our wish is to please you as nearas possible to your liking, so as to induce you to continue to favor us with your orders.

WILLFORD & NORTHWAY,

MILL BUILDERS AND FURNISHERS.

PLANS

And estimates furnished for complete new Flour Mills, or for remodeling Stone Mills to the Roller Process. Agts for Allis-Gray roller mill.

Millers using our Centrifugals are our Best Advertisers

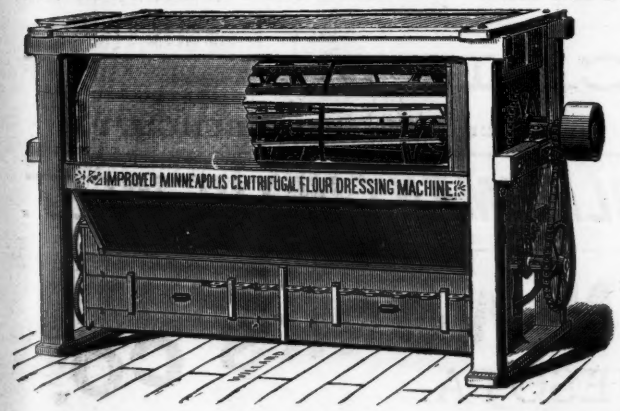
DON'T BUY

A MINNEAPOLIS CENTRIFUGAL BOLTING REEL

UNLESS YOU WANT THE BEST.

One that will give you no trouble, one that will do your work better than you expect. We can't give you each particular reason why it ranks first, but simply say to you it does do so, and ask you to try it against any or all machines; and see for yourself how gallantly it keeps the lead on all classes of materials.

The introduction of these machines has created a revolution in the method of handling many materials. They often save their entire cost in a two weeks' run. What was a luxury has become a necessity.



FOR THE NEW CROP

PUT IN A

MINNEAPOLIS CENTRIFUGAL BOLTING REEL.

You Will Consider it the Best Purchase You Ever Made.

EVERY MACHINE A SUCCESS!

Clear up your flour from specks and fluff. For instance, take the best flour from the head of your ordinary reels to packer; then, when the specks and fluff begin to show, draw your slides and send the material to a Centrifugal Reel to be handled. *Note the difference in color and sharpness of your flour.* Or, put the tailings of your ordinary reels to a pair of smooth rolls, thence to a Centrifugal Bolting Reel. The flour of Centrifugal to packer, middlings through a piece of coarse cloth at tail of Centrifugal to purifier, and tailings proper to shorts. Note the difference in your clean up and the better quality of your flour over the old way of handling, and then commend your sagacity in taking our advice. While you are buying buy the best, **that's ours.** Every one using it says so. **EVERY MACHINE DOING EXCELLENT WORK.**

We Offer to the Millers of the Country our famous "GOLD RIBBON" brand of

Millers or millwrights changing mills over to the roller system, write us about our silk, for prices, etc. It will pay.

BODMER BOLTING CLOTH

Millers who know the value of exact count in Bolting Cloth will do well to correspond with us.

MANUFACTURED AND IMPORTED EXPRESSLY FOR OUR TRADE.

Our inspector rigidly requires the *best silk thread, great strength, full, square count, and evenness of mesh,* as we are well aware it is the only way to gain and keep the lead. The largest and best millers of the country are using our Gold Ribbon Bodmer Cloth and claim they can depend on its count when the best of other brands fail. Cloths made up with best wist and ticking, for 30 cents lineal foot of reel, and every cloth sent on its merits. Correspondence solicited, prices and discounts on application.

To be continued in our next.

WILLFORD & NORTHWAY, Minneapolis, Minn.

WILCOX & SCAIFE,

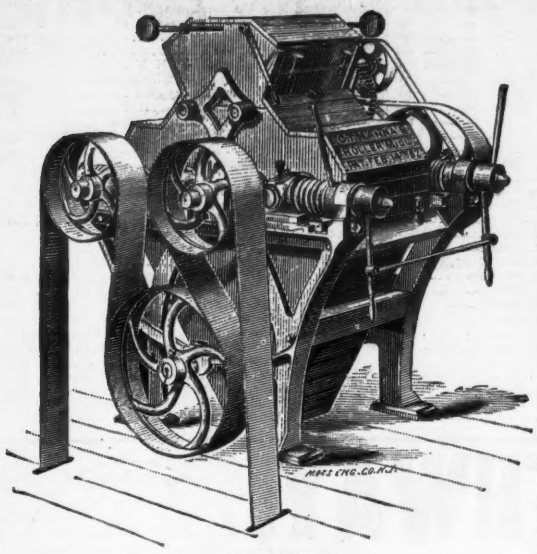
Successors to Wilcox, Shinkle & Co.,

General Mill Builders and Furnishers,

AND MANUFACTURERS OF

C. T. Hanna Roller Mills,

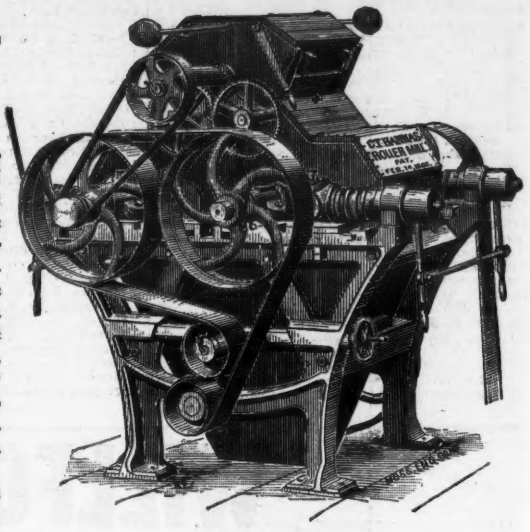
Pat. Feb. 14, 1882. Pat. Feb. 13, 1883.
Other Patents allowed.



DRIVING END.

CORRUGATED TO SUIT EACH REDUCTION

of wheat to middlings and middlings to flour, leaving the bran broad and clean. All the horizontal adjustments are in direct line with line of contact. They are quite easily adjusted, and are positive in their action. The rolls are thrown apart by moving one lever, the reverse movement of same lever bringing them back to place of action again. They have a positive arrangement for keeping the rolls from contact with each other when running empty. Each end of roll has a separate vertical adjustment to keep them parallel with each other and in line w th line of contact. They are driven by SUPERIOR belt movement, having large amount of belt surface for the amount of power to be transmitted, hence, no strain or slipping of belts. Have both positive and automatic feed.



DRIVEN END.

THEY ARE NOT SURPASSED BY ANY ROLLER MILL

MT. PLEASANT, Pa., July 27, 1883.

Mr. C. T. HANNA.

Dear Sir: I have been using a full line of your roller mills for one year and your system of milling is giving me *ENTIRE SATISFACTION.* The only trouble that I have is to keep up with my orders, and if my flour was not superior to all other roller mill flour, I would certainly not receive so many orders for it. Respectfully O. P. SHUPE.

Address WILCOX & SCAIFE,

39 Water Street, PITTSBURGH, PA.

THE OLDEST MILLFURNISHING ESTABLISHMENT IN THE WEST.

THE NORTH STAR IRON WORKS CO.

MINNEAPOLIS, MINNESOTA.

Machine Shop, Foundry, Boiler Shop

Manufacturers and Dealers in Shafting, Pulleys, Gearing, Etc.

BOLTING CLOTHS

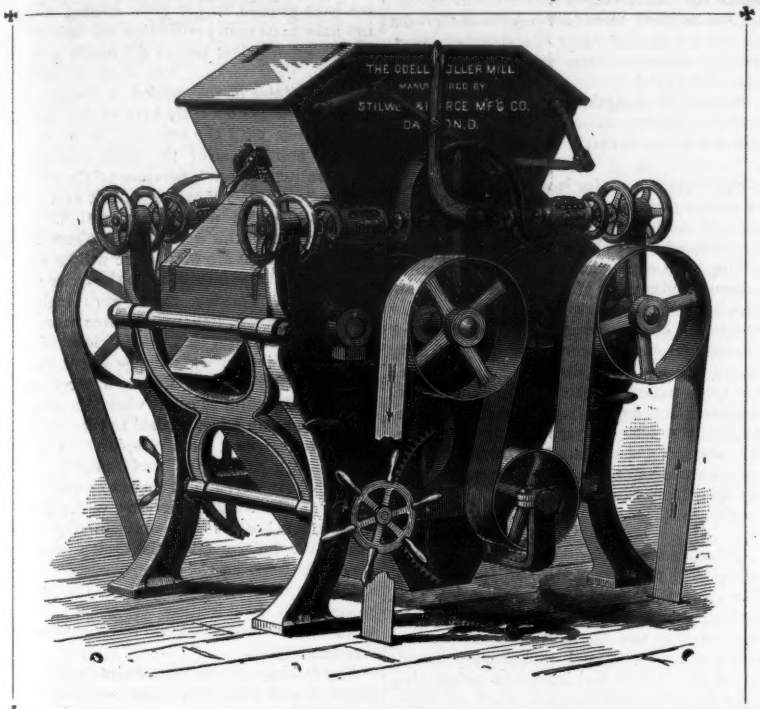
which we import directly from the manufacturers in Switzerland, and which *we warrant equal to any brand in the market,* cloths made up ready for the Reels in the latest improved manner, using the best of Ticking and Silk Twist. Please write for prices discounts and samples of cloth before purchasing elsewhere.

MILL BUILDERS AND FURNISHERS Plans, Specifications and Estimates furnished upon application for complete new flour mills or for remodeling old mills into new process mills. Also manufacturers of **Bolting Chests, Centrifugal Reels and Dust Catchers.**

CHILLED IRON ROLLS, SMOOTH AND CORRUGATED, A SPECIALTY. Correspondence solicited. Price lists and discounts furnished on application. Write for catalogue and pattern lists. **NORTH STAR IRON WORKS CO.**

ODELL'S ROLLER MILL SYSTEM

Is now in successful operation in a large number of mills, both large and small, on hard and soft wheat, and is meeting with unparalleled success. All the mills now running on this system are doing very fine and close work, and we are in receipt of the most flattering letters from millers. References and letters of introduction to parties using the Odell Rolls and System, will be furnished on application to all who desire to investigate.



Odell's Roller Mill,

Invented and Patented by **U. H. ODELL,** the builder of several of the largest and best Gradual Reduction Flour Mills in the country.

AN ESTABLISHED SUCCESS!

We invite particular attention to the following **Points of Superiority** possessed by the Odell Roller Mill over all competitors, all of which are broadly covered by patents, **and cannot be used on any other machine:**

1. *It is driven entirely by belts, which are so arranged as to be equivalent to giving each of the four rolls a separate driving belt from the power shaft, thus obtaining a positive differential motion which cannot be had with short belts.*

2. *It is the only Roller Mill in the market which can be instantly stopped without throwing off the driving-belt, or that has adequate tightener devices for taking up the stretch of the driving-belts.*

3. *It is the only Roller Mill in which one movement or a hand-lever spreads the rolls apart and shuts off the feed at the same time. The reverse movement of this lever brings the rolls back again exactly into working position and at the same time turns on the feed.*

4. *It is the only Roller Mill in which the movable roll-bearings may be adjusted to and from the stationary roll-bearings WITHOUT DISTURBING THE TENSION-SPRING.*

5. *Our corrugation is a decided advance over all others. It produces a more even granulation, MORE MIDDLINGS OF UNIFORM SHAPE AND SIZE, AND CLEANS THE BRAN BETTER.*

We Use None But the Best Ansonia Rolls.

Our corrugation differs from all others, and produces **Less Break Flour, and Middlings of Better Quality.**

Mill owners adopting our Roller Mills will have the benefit of Mr. Odell's advice and long experience in arranging mills. Can furnish machines on short notice. For further information, apply in person or by letter to the sole manufacturers,

STILWELL & BIERCE MFG. CO., DAYTON, OHIO.

The Liability of Dust Explosions in Mills

IS DONE AWAY WITH BY USING THE

PRINZ PAT. IMPROVED DUST COLLECTOR

IT IS AN ESTABLISHED SUCCESS.

The Back Draft Cleaning Mechanism, the only perfect device for keeping the cloth clean, exclusively used under the Prinz Patents. **Beware of Infringements.**

Prinz Patents,
Nos.
272,473
272,474

Prinz Pat. Improved Dust Catcher.

Prinz Pat. Improved Dust Collector with Fan Attachment.

CONSOLIDATED
Licensees Patents,
Nos.
63,325
125,518
149,434
171,973
207,585
211,033
228,023
231,376
235,197
239,755
248,984
250,813
251,120
251,121
258,875
258,876
258,878
259,872
259,873

One Thousand Machines in Successful Operation. Machines in steady operation for over two years. Selling at the rate of 200 a month. **FULLY GUARANTEED.** *Manufactured exclusively under the PRINZ PATENTS. Also licensed under all patents now or hereafter owned and controlled by the combined licensees, Geo. T. Smith Middlings Purifier Co. of Jackson, Mich., Kirk & Fender, Minneapolis, Minn., and Sam'l L. Bean of Washington, D. C.* **See Special Notice.** *License under all patents furnished purchasers. Send for circulars and testimonials, All correspondence promptly answered. You will save time, money and labor by using this machine.* **Every Miller Should Have It.** *Remember it is the BEST.*

MILWAUKEE DUST COLLECTOR MFG. CO., Milwaukee, Wisconsin, U. S. A.

NORTHWESTERN MILLER

PUBLISHED EVERY FRIDAY MORNING,
BY C. M. PALMER.
At 25 South 2d Street, MINNEAPOLIS, MINN.
W. C. EDGAR, - - Business Manager.

$2.00 per year in U. S. and Canadas, postage paid
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Agent for Great Britain, Flugel & Co., 26 and 28 Mark Lane, London, who will receive all subscriptions to the Northwestern Miller and communications for publication in its columns.

MINNEAPOLIS, FRIDAY, AUG. 24, 1883.

MINNESOTA has one miller who does not believe in agents or millwrights. Recently becoming imbued with the idea that the old three-run mill must be converted into a full-fledged roller mill, or shut down for good, he began to make inquiries by mail and was soon over-run by an army of machinery agents. His danger became so imminent that he finally, in despair, jumped town in the night, went to the factory a thousand miles or so away, bought a concentrated mill and an old set of smooth rolls without boxes or frame, and brought them home in triumph. With the aid of a carpenter he set up the concentrated mill, rigged up a wooden frame for the smooth rolls, with wooden boxes, behind which a large wedge gives a means of adjustment, and started up another "full roller mill." If the smooth rolls don't flatten the germ enough he drives down the wedges with a hammer and the fault is corrected. It is rumored that he proposes to improve on the corrugations of his break rolls by grinding them smooth with a grindstone and putting in new grooves with a cold-chisel, but we cannot vouch for the correctness of the rumor.

* * *

THE *Miller* (London) must pardon us if we find more entertainment in its advertisements than we do in its reading matter, as that is probably owing to the difference in climate. We find the following in the announcement of a mill for sale in its last issue:

"The mill is driven by steam and water power, and contains six pairs of French stones, modern machinery for cleaning wheat, and softening, dressing, and separating middlings."

There is considerable machinery in use on this side which has a tendency to soften middlings, but we have never yet heard of its makers or users mentioning that as one of its desirable qualities. This also may be owing to the climate.

* * *

A NUMBER of newspapers have for some reason given great importance to the recent meeting of northwestern millers and railroad managers in Milwaukee. The meeting had for its object consideration of the lake competition of the railroads, and was really of more importance to them than to the millers. By means of bogus interviews, etc., a meeting, the like of which probably occurs at least once a week during the year, was given as much prominence as the telegrapher's strike, or a general railroad war.

* * *

THE marked improvement in the milling business brought about by the recent advance in prices, is one of the first hopeful signs of the new crop. While those best posted in the trade have prophesied a prosperous season, even they are relieved by the partial fulfillment of their prophecies. Others, less hopeful, predict that a year or two must elapse before anything like the old time state of the trade is reached. The latter class is, we think, too easily discouraged. A single dull season does not necessarily indicate that all others must be so, any more than a profitable one insures a continuance of such prosperity.

* * *

THE following, which we find in a foreign exchange, shows the vitality of old ideas:

"A mysterious illness has been disturbing a small community in France. One member after another sank, while presenting the usual appearance of lead poisoning, without any apparent cause. The doctors who were called in could not make much of the symptoms except that they seemed to proceed from some food which had been taken. By a process of inductive reasoning and by exhausting the causes which were found to have operated upon all the sufferers, suspicion at last fell upon the bread. An examination was accordingly held at the bakers' premises, but they, having been found blameless, the inquisitors next proceeded to attack the miller, and here, at last, a diligent iuquiry brought to light the cause of all the mischief. Finding that his millstones had cracked in some places, and that the purchase of new stones would be somewhat costly, the miller had adopted the plan of filling the chinks with melted lead. The lead had in the course of grinding naturally got mixed with the flour, and had so found its way at last into the loaves distributed to the population. The tale is interesting as showing the pertinacity of particles of lead in clinging to any substance with which they may get mixed. It is still more noteworthy than the case of lead poisoning which occurred in Paris not long ago, when it was found that a baker had warmed his oven with old wooden boards that had been painted with white lead, and that the residue of the lead lying in the oven had penetrated into the crusts of loaves." —*The Continental Gazette.*

If anyone of our readers personally knows of a case of lead poisoning resulting from the use of lead for filling the holes in a buhr, we should like to hear of it. A buhr containing eight ounces of lead will probably run five years before it requires refilling, and in that time make 2,000,000 pounds of flour. How much lead will be contained in a loaf of bread made from this flour? But few millers who grind with buhrs use lead for this purpose anyway, and we think the much-abused miller should be allowed to rest from the charge of being a poisoner for awhile.

* * *

A SCOTCH company have placed on the British market a patent fire proof elevator, the legs of which are made of round sheet iron tubes which are made in lengths so that they may be readily set up and taken down. With an iron boot and head, and a leather or rubber belt, such an elevator presents no points for the beginning or spread of fire, and as it is said to be cheaper than millwrights' work, it should receive the attention of millers. We have not yet heard of the objections to it, if there are any, and therefore can not give them.

* * *

THE following letter, just received from an Australian subscriber, who is an extensive mill owner, shows the need of a standard work on milling alluded to in the current number of "Rough Notes:" "We have now a full fitted roller mill in Melbourne on the Ganz principle. If not troubling you too much, I should be truly pleased if you would give me your opinion as to whose roller system is considered best and most complete. I am still holding on to the millstone principle and doing good work with rollers for sharps, etc. At the same time I am getting anxious for fear the rollers will put me in the shade, so that I shall consider it a great favor if you will make inquiry and let me know whose principle is the best, and what you would recommend as likely to be the plant of the future. Kindly send me out the latest and best work on modern milling per book post, showing stones and rollers combined, and rollers complete without millstones, and the best manner to dampen the wheat if ground on millstones, for I presume it's not required to be toughened for rollers. In short, when I do go in for altering my manufacture I hope to do the right thing. Mr. Hays, miller of Gaullem, New South Wales, is now on a tour through 'Frisco and America, and although the brothers have spent a lot of money on cleaners and sharp rolls, but have kept to the millstones on wheat, I expect they will go in for rollers now." The lack of a reliable work written by an unbiased and able writer, from an entirely independent standpoint, is seriously felt. There are various good treatises on mill building which are useful to the millwright, but there is no information to be had in book form that is not from six to ten years old, which renders it almost valueless to the miller. The milling newspapers supply much valuable information and contain more news regarding things that are really novel than any book possibly can, but millers want a work of reference, easier to consult than a file of newspapers and always at hand for the solution of difficulties.

* * *

VERILY the ancients knew best, and Aristotle, when he said "He who lies must expect to be lied about," was holding up four aces and a king. Only a few short summer weeks ago we called the editor of the *Milling World* "a gentleman," and now listen to him. "Some vagabond (he calls Palmer, of the NORTHWESTERN MILLER, 'brother') etc. etc!" We shall never indulge in sarcasm again.

* * *

WHO says milling papers are useless, unreliable, or misleading? Show us the man! Why, here is a single original sentence in the last issue of the *Grain Cleaner* that is worth any where from seven to nine billion dollars to the millers of the world. Read it. It is worth the italics we give it:

"*Patent flour should include all the gluten of the wheat, but there are a great many millers who send a large portion of it to the bakers' barrel.*"

Shades of Kingsford, Duryea, and Fox, does the amiable maniac think that a flour mill is a starch factory!

* * *

SERIOUSLY, now (for it would be impossible to write seriously in the same paragraph that contains such driveling idiocy as the quoted sentence) who can blame the carpers at the milling press when such statements are made solemnly and earnestly for the benefit and guidance of men who know their business. Yet such is the blind assurance of the author of this paragraph and a score more almost equally absurd (but not quite; for, without exception, it is the worst ever written for a milling paper) appearing in the same paper, that he will undoubtedly accuse, in opprobrious language, the venerable and modest editor of the NORTHWESTERN MILLER of attempting to monopolize all milling information because he ventures to dispute it.

* * *

MILLERS should insist more vigorously on selling their products under their own brands. The value of a good brand which has always covered a reliable article, is shown in times of dullness like that through which the trade is now passing. Old and well known brands sell because buyers feel confident when they order them that the flour will work all right, and they do not care to try experiments. They may not bring any more money than flour of the same quality with less reputation, but they *sell* while the others will not, and thus the miller is able to keep his mill moving and his millers employed at some kind of a profit. Though it may be a small one it is better than idleness; or even if at no profit at all, the mill's brands are kept in the market and its customers continue to buy them against the time when there may be a profit again. The miller who, in consideration of a thousand barrel order, allows his customer to dictate the brand, is laying up trouble and vexation of spirit for himself. The purchaser, who may be an eastern wholesale grocer or flour dealer, may build up a reputation on the brand, but the man who made the flour won't. The order for the next thousand barrels will go to the man who can match the quality and beat the price five cents a barrel. The miller who thinks that the quality of his flour can't be matched has no need for trade-marks, and admonitions addressed to him are wasted. Fortunately that class is much smaller than it was a year ago.

* * *

AS showing the depression existing in English agriculture, the London *Times* states that there is now on sale in that country, and waiting buyers real estate of an aggregate value of $50,000,000. This includes all classes of property, but is largely agricultural lands. The competition of foreign countries, chiefly America, combined with unfavorable weather for crops for several years past, has so much reduced the income derivable from landed property, as to render its ownership almost a luxury.

* * *

GERMANY prohibits the importation of American pork because its peasantry will be injured by its use. By a recent order, ships of war are not permitted to take on board more of the same food than will suffice for the outward and return voyage, as it can not be landed on German soil if there is an overplus. So American pork is good enough for high-priced German sailors, of whom the government takes the greatest care, but is fatal to the underpaid laboring classes who are being driven out of the empire by hundreds of thousands, because they cannot earn enough to buy food to keep soul and body together. A logical ruler is Prince Bismarck.

LOCAL & PERSONAL.

The situation of the milling business is but little changed from a week ago, there being a good healthy tone to the flour market, with a tendency to higher prices. The volume of trade done by our millers is perhaps smaller, due to a difference of opinion between themselves and buyers as to values; but the former are hard pressed to get good milling wheat, and have fixed pretty stiff prices on their flour, being confident that buyers will finally have to come to their terms. The stock of milling wheat available in this market is limited, and the mills will undoubtedly have to run light to make it last until the new crop is in condition for use. Most of the mills were pretty well contracted ahead, previous to the present "boom," and every move now made as to the future is attended with extra caution. The flour production this week is slightly increased, but the prospects are that there will be a material falling off soon, owing to the cause mentioned. On Tuesday there were eighteen mills in operation, but two or three were expected to shut down before the close of the week. The output will average about 14,000 barrels per day against 13,500 a week ago. Some of the mills, in cases where the owners have wheat, are being pushed to their full capacity, but we hear some complaint of stock not working quite as freely as it might.

The wheat stored in Minneapolis elevators, including the transfer elevator, on Aug. 21 was 650,000 bus. There were about 350,000 bus. in the mills, making the total amount of wheat in store in the city 1,000,000 bus., against 1,090,000 last week. The wheat stored at St. Paul is about 38,000 bus. The wheat in store in Duluth elevators on Monday was 120,895 bus.

The following were the receipts and shipments at and from this point, as reported by the *Pioneer Press*, for the week ending Aug. 21:

		Received.	Shipped
Wheat, bus.—	1883	228,000	17,500
Flour, bbls.—	1883	1,375	75,437

Our St. Louis correspondent reports an improvement in the milling business there last week, with nineteen mills in operation; producing 11,600 bbls. per day against 12,800 the previous week.

* * *

The Palisade mill started up on full time Wednesday.

The Dakota mill was to be shut down the latter part of the week.

Messrs. Sherer and Helfrich attended the turnfest at New Ulm last week.

Head Miller Stahler and his wife are this week visiting relatives near Boscobel, Wis.

The first car of new wheat came to market Tuesday, and graded No. 2. The Columbia mill bought it.

The Sergeant Mill Buhr Driver Co. have sold two of their Baker breaks to Willing & Hall, of Lyle, Minn.

Mr. H. M. Rounds, of Clear Lake, Iowa, inventor of the sectional roller mill bearing his name, was in the city last week.

John H. Nicolin got in Monday from a successful trip in Minnesota and Dakota, and reports crops all through as excellent.

The bolting cloth trade with Willford & Northway is very brisk; they are getting in large and numerous orders for the well known Bodmer brand.

John O'Neil, one of the Millers' Association boys, departed for Portland, Oregon, Tuesday. He gets a respite of six weeks, his pay going on.

Head Miller Campbell, of River Falls, Wis., called on us Monday, being in the city on business connected with the Freeman mill. He moves his family to River Falls the first of the month.

The two nines of the Pillsbury A mill played their third game of base ball Monday, the score resulting in a tie of 8. This gives Capt. Townsend and his men courage, and other games will probably follow.

The Pray Mfg. Co. have sold two Pye centrifugal reels, and an Eureka smutter to go into a mill at Jamestown, Dak.; and, also, secured an order for the bolting cloth, belting, etc., for the Pettigrew mill at St. Olof, Dak.

The head millers' committee on constitution met Tuesday evening and adopted an

outline for constitution and by-laws of the proposed permanent organization, which was to be submitted to the full meeting Thursday evening.

While our millers may have a good wheat crop and fair margins to work on this fall, it is just possible that they will be bothered to get sufficient water to run all the mills up to full capacity. Even now the water in the river is low, and a little later this may prove an aggravating feature of the season.

It is an open secret that Jas. Miller, in charge of the Excelsior mill previous to its destruction in 1881, and since in the employ of E. P. Allis & Co., has been engaged as head miller of the Pillsbury B mill, to assume his duties whenever the proprietors decide to go on and furnish the mill.

Willford & Northway have received orders for centrifugal reels as follows the past week: N. Dustin & Co., Blue Earth City, 1; Aug. Defore, Spring Valley, 1; R. Gregg & Co., Cannon Falls, 1; Wisconsin mills, 3; Indiana mill, 1; Henry Milling Co., Henry, Ill., 1; Redfield, Dak., 1

W. F. Gunn, Thos. Scott and Ed. Clement were of a party of nineteen which last week chartered a sleeper and went to Big Stone lake on a fishing and hunting expedition, starting Wedne-day and returning Sunday. They say they had a rousing good time, and we are wont to believe them.

Jas. Pye returned from southern Minnesota Monday, and says that last week the section of country about Albert Lea and west of there was getting too much rain for the good of the wheat crop, although no special damage had been done up to that time. Mr. Pye left for the Red River country Tuesday.

The Pray Mfg. Co. this week shipped the rolls to Norfolk, Neb., for the remodeling of Mathewson & Co.'s mill, for doing which they have the contract. As changed over, the mill will have a capacity of 100 barrels on the roller system, using 12 pairs of Livingston rolls, 5 purifiers, 2 Pye centrifugal reels, 6 long silk reels, and the regulation outfit of cleaning machinery.

At a meeting of the Northern Pacific Elevator Co., last week, Geo. S. Barnes, the general manager, was elected president in place of E. V. White, the former also retaining the position of manager. Capt. H. W. Holmes, of the Northwestern mill, was at the same time chosen vice-president. The stock of this corporation will be increased from $300,000 to $500,000.

Receipts of wheat by grade at Minneapolis for the week ending Aug. 21, were as follows:

	Cars.		Cars.
No. 1 hard	48	No. 4 regular	
No. 2 hard	22	Rejected	21
No. 1 regular	65	Condemned	25
No. 2 regular	158	Rejected barley	2
No. 3 regular	107	Rejected oats,	1
		Rejected corn,	1
Total			450

Jas. Robinson, the late head miller of the St. Anthony mill, has gone up north and entered into copartnership with a brother in the lumber business. We are very sorry to lose Jim, as he is a fine fellow, and leaves a good record behind him. According to report, he is comfortably supplied with this world's goods, having been left either one or two legacies of considerable amounts.

Henry Crossen departs this week for Eufaula, Ala., where he will remodel one of the largest mills in the south and introduce the roller system, using Odell rolls. The mill at present has a capacity of 300 barrels, and as reconstructed, the capacity will be made between 250 and 350 barrels. Money will not be spared to make the mill the best south of the Ohio river, and anyone acquainted with Mr. Crossen's record will at once say that he is the man to do this. The estimated cost of the changes to the mill is $40,000. It is operated by steam power. Mr. Crossen expects to finish the job so that he can return by Christmas.

The Phœnix mill is conceded to be one of the best pieces of milling property in the city. It has a local trade that takes the greater part of its entire product, while at the same time it can dispose of almost any amount of its well known flour east. As a result the mill is always running, even in dull times when others are idle. At the present time it is desired to make some repairs to the mill, but the proprietors find it almost impossible to get enough flour accumulated to warrant a shut down for it. These are plain facts, and we are pleased to record them. The Phœnix people may attribute the source of some of their success to having so good a miller as Jas. Tamm.

According to pretty good authority, Manager Hubbard, of the Millers' Association, gets a salary of $10,000 this year. It has been $5,000; but Mr. Hubbard is evidently the right man for the place, and earns the larger sum. Few people have a true conception of the business of the Minneapolis Millers' Association. It has big credit, and handles money by the wholesale. A gentleman somewhat acquainted with the routine of the general office here, says that it never stops giving out checks in busy times until the check books are exhausted! One day was mentioned when $180,000 was disbursed before eleven o'clock.

Geo. Walker, formerly in the Pillsbury A mill, has commenced action in the United States court at St. Paul, against the Spearfish Milling Co., of Spearfish, Dak., for $2,000. Mr. Walker made a verbal agreement with Supt. Woulzmut, of the company, to take charge of their mill at $2,000 for the year. After coming on to Minneapolis on a visit, while the mill at Spearfish was receiving additions and improvements, Mr. Walker was unexpectedly notified by the superintendent that owing to a change in the company, his services would not be needed. We have seen a letter from L. W. Valentine, the president of the company, in which he verifies the agreement between Mr. Walker and the superintendent, and George feels pretty sure of winning his case.

We are pleased to state that the St. Anthony mill has passed into new hands, and will at once be got in readiness for work on the new crop. Messrs. Hinkle, Greenleaf & Co., who own and operate the Humboldt mill, lease the St. Anthony, the business management falling to Mr. F. S. Greenleaf. This makes three mills that the latter gentleman will have on his hands, the Dakota being the third. E. Stahler, who has made so fine a record with the old Dakota mill, will be given charge of the St. Anthony also, and most of the old milling crew will be reëmployed. Some changes will be made in the mill, but how extensive they will be, or of what nature, is not yet settled. The old office will be kept open, and the business will be done there. By this, a daily capacity of over 1,400 barrels is placed under Mr. Greenleaf's management.

C. A. Pillsbury and C. S. Hulbert who chiefly compose the Pillsbury & Hulbert Elevator Co., the heaviest concern of the kind in this part of the country, have been out on a tour of inspection over the grain fields tributary to the Manitoba railroad, with the intention of erecting, where they may judge advisable, several elevators to cost not less than $1,000,000. One of them telegraphed as follows from Crookston: "We have carefully examined the wheat crops from Minneapolis to Neche, via Fergus Falls; also from Devil's Lake to Crookston; have taken pains to make the most careful inquiries of all our agents, and we are completely astonished as to what we see and hear. I think you can safely calculate on moving 25 per cent more wheat between Minneapolis and Grand Forks, and 50 per cent more north and west of Grand Forks than ever before. We have more faith than ever before in this section of the country, and offer congratulations on the magnificent prospects."

Highwaymen seem to be paying particular attention to mill men in this city at the present time, two cases of persons connected with the business being stopped, having occurred within ten days. On the night of the 11th inst., at about 12 o'clock, as he was going home from work at the Pillsbury A mill, H. Wallace was stopped at a dark place near the corner of Third Ave. and Second St. southeast by two men, who stepped out from behind trees, and, presenting revolvers, demanded his money. Wallace quite submissively disgorged $20 and his watch; but the latter was handed back to him, the wag of the A mill cruelly suggesting that this was because the robbers were looking for bigger game! The other case occurred Saturday night, C. E. Jones, the millwright, being the victim. He came in from Hastings, where he has charge of the work on the Espenschied elevator, about midnight, and while on his way home in south Minneapolis, was overhauled by men with revolvers, and turned over $15 for the privilege of being allowed to resume his journey homeward. Two parties have been since arrested on suspicion, but were discharged, their innocence being proven.

The Capacity of Our Mills.

The present milling capacity of Minneapolis is shown in the appended table:

Name of mill.	Operated by	Bbls.
WEST SIDE.		
Anchor	C. A. Pillsbury & Co	900
Cataract	D. R. Barber & Son	600
Columbia	Columbia Mill Co.	1,000
Crown Roller	Christian Bros. & Co	1,700
Dakota	H. F. Brown & Co	250
Excelsior	E. V. White & Co	800
Galaxy	Cahill, Fletcher & Co	1,000
Holly	F. S. Hinkle	250
Humboldt	Hinkle, Greenleaf & Co	775
Minneapolis	Crocker, Fisk & Co	600
National	W. F. Gunn	150
Northwestern	Sidle, Fletcher, Holmes & Co	1,300
Palisade	L. Day & Son	1,500
Pettit	J. A. Christian & Co	1,300
St. Anthony	Hinkle, Greenleaf & Co	450
Standard	E. V. White & Co	1,500
Union	G. W. Goodrich & Co	310
Washburn A	Washburn, Crosby & Co	3,200
Washburn B	Washburn, Crosby & Co	1,000
Washburn C	Washburn, Crosby & Co	2,000
Zenith	Day, Rollins & Co	600
EAST SIDE.		
Pillsbury A	C. A. Pillsbury & Co	5,200
Phœnix	Stamwitz & Schober	275
Total capacity		26,660

A year ago at this date the daily capacity was 21,250 barrels. Since that time the North Star and Model mills, with 600 barrels capacity, have been burned, while the Columbia, Minneapolis and Excelsior mills, with a total capacity of 2,400 barrels, have been completed and put in operation. The Palisade mill has been thoroughly remodeled, and the capacity increased from 550 to 1,500 barrels per day. Other less notable increases have been in the Washburn A, Galaxy and National mills. Another source of increase has been from the mills, while really no machinery was added to them, being able to make more flour on the wheat last fall in a given time than ever before, thus simply giving them a higher record. Of course it is understood by all that in giving the capacity of a mill, the maximum figures are universally used; but we must say that the amounts opposite the mills as above set down are nearer the real working figures than is usually the case with statements of the kind, it being our aim to get as near the exact truth as is possible.

Cooper's Chips.

J. D. Conley has been elected foreman of the North Star shops.

The Co-Operative cooper shops are running full time now, turning out 1,200 barrels per day.

The North Star shops are running to full capacity now, turning out about 1,500 barrels per day.

J. N. Rapp, one of the members of the Phœnix Barrel Co., was recently married to a St. Louis lady. Mr. and Mrs. Rapp were among those attending the picnic Saturday.

The cooper shops of Wm. Sauer at Detroit, Mich., containing a large stock of staves and a quantity of finished work, were recently destroyed by fire. The loss to Sauer, who carried only $2,000 insurance, is $20,000. Five dwellings in the vicinity were also burned.

The coopers' convention which was in session at Peoria, Ill., for several days last week, adjourned on the 15th, having concluded its labors. This meeting was called for the purpose of re-organizing the international union, an association which was formed in Chicago ten years ago and was dissolved after a few years. The last convention was held in 1875. Delegates were present from nearly all the principal cities in this country and Canada. The proceedings were secret. The re-organization of an aid association or union was effected, and it was decided to organize a mutual insurance company, which will increase, it is thought, the membership to 10,000 within a short time. The following officers were elected: President and treasurer, Thomas Henneberry, of Cleveland; secretary, John B. Lewis, of Peoria; first vice-president, John B. Lewis, of Peoria; second vice-president, P. Egan, of Toronto, Canada; third vice-president, John J. Long, of Alton; fourth vice-president, James Herdman, of Peoria; fifth vice-president, John McGrath, of Cleveland. The name of the organization was changed to the Coopers' Protective Association of North America, and then the meeting adjourned subject to the call of the executive committee.

Coopers' Recuperating.

The coopers of the city held their first annual picnic at White Bear lake Saturday, and it was a most successful and pleasant affair. Preparations for the occasion had been under way for some time, and the manner in which every detail was carried out shows those composing the management to have faithfully and creditably discharged their duties. All the shops in the city were represented, each having appointed a committee to act conjointly, and there was a general suspension of work for the day. The gentlemen having the picnic under management were as follows: From the Coöperative shops—Messrs. McDonald, Johnson, and Everson; North Star shops—Messrs. Wall, Schaumleffel, and Owens; Hennepin shops—Messrs. Hetherington, Dorsey, and Richlow; Phœnix shops—Messrs. Jenkins, Sifferle, and Marshall; Hall & Dann's shops—Messrs. Sisson, Blanchard, and Wiltbank; Bumb's shops—J. Bumb; Northwestern shops—T. Flannery and Geo. Thompson. John Schaumleffel was the directing power of the day, and T. Flannery the secretary, and J. Sifferle the treasurer. The day was a very fine one, and was the means of inducing a general turnout, the coopers, with their wives, children, and sweethearts, being all on hand. About 1,000 tickets were sold, and when the start was made at 8:30 from the Manitoba depot, fourteen cars, drawn by two locomotives, were comfortably filled, and all were in the happiest mood. The run to the lake, about fifteen miles, was made in a little less than an hour, and on arrival the party disembarked and marched, headed by Brook's band, to the shady and spacious grounds along the banks of the lake. But a short time elapsed before the boat race between crews of the different shops was arranged by Messrs. Schaumleffel and Marshall, and at the word "go," and to a lively air by the band, six boats, manned as follows, pulled out: Coöperative shops—Messrs. McIntosh, Jensen, and McDonald; North Star—Messrs. Schei, M. Haverstock, and S. Haverstock; Phœnix—Messrs. Rapp, Deovere, and Wise; Hall & Dann—Messrs. Wiltbank, Sisson, and Hennesy; Hennepin—Messrs. Hetherington, Corkey, and Dorsey; Northwestern—Messrs. Parker, Grady, and Wall. This race was the feature of the day, and was entered into with much spirit, each man doing his very best to secure the honor of first place for his own shop. Skiffs were used, and each crew consisted of two oarsmen and a helmsman. The interest on shore was very decided, and when the Coöperative shop pulled in over a length ahead of the others, they were met with an enthusiastic shout. The men taking part were all green to the work, but they rowed the mile in less than five minutes. The order in which the boats came was: Coöperative, first; North Star, second; Hennepin, third; Northwestern, fourth; Hall & Dann, fifth, and Phœnix sixth. After the boat race, Messrs. McDonald and Sisson provided the company with considerable amusement by introducing sack racing and football. At the conclusion of these exercises, attention was generally turned to lunch, and about an hour was devoted to satisfying the inner man. About 1:30, most of the picnicers fell into line and marched with the band to the dancing platform, where the balance of the time was pleasantly put in, notwithstanding that the day was a hot one. Those not taking part in the terpsichorean exercises found shady seats near from which they could watch the dancers on the platform. Messrs. Dorsey, Schaumleffel, Jenkins, Blanchett, Richlow, and Jensen had charge of this part of the programme, and did their utmost to please, with unvarying success. While the dancing was in progress, a game of base ball was played on neighboring grounds between the Blue Stockings and a nine of coopers. The latter won by a score of 9 to 1. The train for the return trip made its appearance about 5 o'clock, and the people being soon on board, the city was reached at 6, all having enjoyed the day, and feeling little the worse for having taken active part in its pleasures. The party was a representative one, and a credit to the cooper fraternity, as was also the manner in which the affair was conducted.

The Early History of New Process Milling.—II.

It is rare, if not unprecedented to find even in this country of great opportunities for youth, a person who begins at the bottom, with no capital but that of the head and hands, to find himself at the age of forty, the foremost man in the world in the trade in which he is engaged. Not only in respect of the magnitude of his business, but for the quality of his goods, and the buildings and appliances used in their manufacture.

This achievement is the more remarkable in an old, and universally practiced industry like the art of the miller. Yet in the brief sketch which is to follow, we shall endeavor to trace the history of one, whose position is fully indicated in these opening paragraphs.

Mr. Charles A. Pillsbury, whose portrait adorns this page, was born in the year 1842, at Warner, New Hampshire, a small country village, where he attended school until he was twelve years old. His father, Hon. Geo. A. Pillsbury, then removed to Concord, N. H., where the subject of our sketch attended the city schools and graduated at the age of sixteen years. After graduating at the Concord high school, he went to the academy at New London, N. H., for one year. This academy was at that time quite a prominent school. In a very short time after this he entered Dartmouth college, and graduated in four years from that time, teaching school during the four winters he was in college to earn money to pay his class bills. Mr. Pillsbury's father was at that time comparatively a poor man, and he was obliged to help himself. He is not ashamed, but on the contrary, rather proud in speaking of his early life at the present time to allude to his experience as a newsboy in Concord during his school days there. After finishing his college course he went to Montreal and engaged as a clerk in a general produce commission store. At the end of three years he acquired a small interest in the business, which he closed out after a short time, having a touch of the western fever. His uncle, John S. Pillsbury, since governor of the state of Minnesota for several terms, was at that time residing in Minneapolis, and Mr. Pillsbury naturally turned his footsteps in this direction. Being well pleased with the town which he found growing up around the falls of St. Anthony, he purchased a third interest in what was then known as the Frazee & Murphy mill, agreeing to pay therefor ten thousand dollars. At the time Mr. Pillsbury became interested in this mill, its capacity was about 200 barrels a day, and as he himself says: "Up to that time Minneapolis flour was away down at the bottom of the heap, and the mill had been losing money almost steadily up to the time he bought an interest in it. The other fellows in the business rather pitied me, and said that another poor devil had got caught in the milling business of which he would soon get enough."

At that time the mills of Northfield, Dundas, Hastings, the Vermillion mills, and the Oxford mill were making flour which sold very well, but in Minneapolis there was not yet any mill making flour of the quality equal to those mentioned. Mr. Pillsbury's partners in the mill were Wells Gardner and Geo. Crocker. Both were active business men, largely interested in other enterprises, and the management of the mill was almost from the first largely intrusted to him. The partnership began in July and the mill was started on new wheat in the latter part of August, the crop coming in very early that year. At that time it was the general impression among Minneapolis millers that the reason their flour did not quite equal that made by the outside mills was because the wheat coming to this market was inferior in quality to that grown elsewhere. After a very thorough investigation, in the course of a short time, he visited the mills at Northfield, Hastings, and elsewhere, after which he came to the conclusion that there was no difference in the quality of the wheat, and that it was to its better handling to which he must look for the superior grade of flour. The condition of the buhrs first attracted his attention, and the conclusion was soon reached that they must be put in absolutely perfect face, well balanced and finished, in order to do good work.

Nathan La Croix, who afterwards built the first purifier placed in the Washburn mill, previously alluded to in this series of articles, at or about that time applied to Mr. Pillsbury and endeavored to induce him to purchase one of the machines, but as he was considered rather a visionary character, Mr. Pillsbury gave the matter but little attention until he learned that the machine had been placed in the Washburn mill, and had been put in successful operation by George T. Smith, who was at that time head miller in that mill, and who placed brushes on the purifier, as previously narrated. Mr. Pillsbury visited Mr. Smith with the intention of engaging him to fit up his mill with purifiers, agreeing to pay him therefor the sum of $10,000, and engaging him at the same time as his head miller, and the changes hereafter indicated were made under his directions. It was in this matter that the pluck of the man was shown. With all his small savings invested in the mill, which was yet almost an experiment with him, to invest $10,000 and change its entire system was a much bolder move than the investment of half a million would be at the present time. But the results justified his expectations. At first the system was to remove about ten per cent of

CHAS. A. PILLSBURY.

middlings which had formerly gone into the low grade flour and run the flour from them into the straight grade.

Up to that time the endeavor had been to make as few middlings as possible, bnt after the purifiers went into operation the endeavor became a struggle to see how much middlings could be made. The dress of the buhrs was changed and the middlings were increased until about twenty per cent was made. At the end of the first year Mr. Pillsbury was gratified to find that his share of the profits of the mill were $6,000. Highly pleased with the results of the first year's business, the firm sought to increase it in the succeeding year, and bought what was then known as the Taylor mill, now the Pillsbury B, from Lyman Blair, who held a mortgage on the property. This mill was fitted up under the supervision of the head miller, Geo. T. Smith, who when he first came into the old mill was much laughed at by the old millers, and his ideas as to the reduction and purification of middlings were made the subject of ridicule, and the antagonism between the representatives of the old and the new systems was a regular war between the Guelphs of low milling on the one hand and the Ghibellines of the new process on the other, and became so great that finally it was found necessary to discharge the head miller of the Taylor, and Mr. Smith was given charge of the arranging of both mills.

Patent flour at that time was worth about $14 in New York, and for several years the prices varied but slightly. For two or three years the price of wheat fluctuated between Eastman and Paris Gibson,) who removed the machinery from a large mill in Lockport, N. Y. It burned in Dec. 1878, and was rebuilt in the depth of winter in eight weeks. In 1880 the erection of the A mill was begun, and is at present and for some years likely to remain the largest mill on earth, having a capacity of over 5,000 barrels per day. In Dec. 1881, the old B and Empire mills were burned together with the Minneapolis and Excelsior, belonging to other firms. The Empire was not owned by the firm, but was rented from an eastern capitalist, who has since sold the site to an electric light company. The B mill was shortly afterward rebuilt and it is expected that it will be running with a daily capacity of 1,500 barrels, on the present crop. This will make the aggregate capacity of the mills owned and operated by Mr. Pillsbury's firm, 8,000 barrels per day. The investment in these mills and the grain elevators etc., required for their operation is over $2,000,000. This is the largest milling investment in the world, and the subject of our sketch naturally feels proud of the growth of the business founded by him but little more than a dozen years ago on a borrowed capital of $10,000.

We have not alluded in this article to the extensive lumber interests of the firm of which Mr. Pillsbury is a member, because it is scarcely within the scope of this series of articles. Yet we may say in passing that they are among the most extensive owners of pine lands and manufacturers of lumber in the northwest. Their mills at Gull river produce 175,000 feet daily during the sawing season.

Though a typically busy man, Mr. Pillsbury has found time to join in many enterprises for the public good, and has been, for the past seven years, one of the most prominent members of the Minnesota state senate, his majorities, when he has had opposition, being twice as large as the whole number of votes cast for his opponent. The work by which he is best known in legislative life—and the act most creditable to the state, of any passed since he became a member of the senate—was the authorship of the famous "bond bill," by which the repudiated bonds of the state were paid, after hanging like a cloud over its fair name for more than twenty years. He is at present chairman of the finance committee and is universally respected by his brother legislators and fellow citizens generally. In attempting to summarize the peculiar qualities which have enabled Mr. Pillsbury to attain such distinguised success in so short a time, it may be said that he is possessed of great executive ability combined with extreme quickness of perception. As an employer he is generous and considerate, and in some measure his success must be attributed to this characteristic. It kindles the liveliest enthusiasm among his men, who are faithful and energetic as can be found in any manufacturing concerns anywhere. In addition to his active mind he is so endowed with healthy and vigorous bodily powers that he has great capacity for labor without fatigue. With these exceptional endowments it requires but slight faith to predict still greater and more substantial results in the future than those which we have endeavored to outline.

A Fraudulent Decision.

Some of our *weakly* weekly cotemporaries have lately been publishing at the head of their editorial columns what they claim were court decisions, one of which reads that "any person who takes a paper from the postoffice —whether directed to his name or another's, or whether he has subscribed or not—is responsible for the payment." We are very much inclined to doubt whether any judge ever rendered such a decision; for to us it seems absurdly ridiculous. By what right, we would like to know, has a newspaper publisher the privilege of sending his paper to any one whose name he can find in a directory, and then, after a few months or a year, to attempt to force payment by holding up the above so-called law, the unconstitutionality of which admits, we think, of no question. There is one thing peculiarly noticeable about the papers that keep this decision at the head of their columns; and that is, that it is only the worthless papers that do it. We know of no good paper of high standing that would attempt such a petty fraud.

Newspaper publishers are always seeking to enlarge their circulation and often send out, to those likely to be interested, sample copies for examination. We are always glad to do this when we receive the name of any one who desires to see the paper before subscribing; but we do not send out our paper and then seek to collect what is not due us through a fraudulent court decision. Hence we wish to say, as we had occasion to say once before, that no bill will ever be sent from this office for a subscription which has not been distinctly ordered.—*Baltimore Manufacturers' Record.*

Messrs. Hurst Bros. have disposed of their interest in the Capital mill at Salem, Ore., and separated. Fred Hurst has purchased a flour and saw mill at Lincoln, Polk county, Ore., and J. D. Hurst, with his son W. S. Hurst, has bought the property known as the Aurora mills at Aurora, Ore. This includes a 4-run flour mill, a saw mill, and 170 acres of land, with a good water power having a 17 foot head. Messrs. Hurst & Son will change over their mill to the gradual reduction system in a short time, and at the same time build an elevator. Harvest about Aurora began the first week in August, and the crop is a pretty good one, being much better than was expected a short time ago.

Lewis C. Scott, of the Baltimore, Md., grain commission firm of L. C. Scott & Co., was suddenly taken ill at his office, on the 15th, and before he could be taken home he expired. Mr. Scott was widely known as a business man. He was unmarried.

ROUGH NOTES.—XXXVI.

FROM A WORKING MILLER'S POCKET BOOK.

The time will come, as it has in all other branches of mechanics, when some one will put in book form the essence of milling knowledge. Such a book is wanted; there is a place for it, but at present there is no one visible who gives promise of having the combination of ability and inclination. There are a number who have the knowledge; a smaller number who have the knowledge and ability to put it on paper, and, altogether, each individual says it is not for him to do, and is looking for the other to take up the pen; hence this concert of inactivity. It is not a very promising work for one who has the ability to do it. He can do other work which will pay better. The demand for this kind of work undoubtedly is strong—what there is of it—but the question is as to whether or not it would be pecuniarily remunerative. The only assurance we have that there will be such a work is that after every period of transition, either in the history of personal, political or mechanical events, there has been developed a recorder. It has always been so. There were many worthy minds in the past who took up such work without considering seriously the question of remuneration, and it is reasonable to suppose that there will be such in this case.

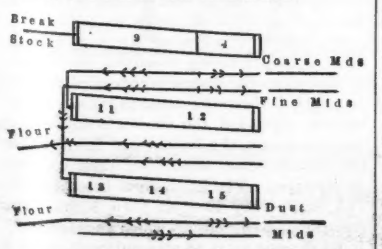
There is another obstacle immediately in the way, and that is in the division of labor, in the construction and operation of mills.

In the treatment of the subject in the hands of one man it might have special bearing on the mechanics of milling, or by another distinctively the operation of the mill. In fact it is important, or rather essential, that these two should move together, yet the miller of to-day is a different man from him of ten or twelve years ago. Then his trade was strictly the operation of the mill. Now he knows more about construction, which, if he does not understand practically, or so as to execute with his own hands, he knows how to direct. He knows what should be.

This was brought about by the events of the period of transition of which we speak. It was a period of construction and reconstruction. His mind has been educated by these events. On the other hand there are many who are constructing mills who do not know how to run them. They are even diagrammed by men who have no knowledge of the stock, the separations, and reductions which they indicate. Their knowledge, if it may be called such, is hearsay and gossip, certainly a very narrow basis on which to make a diagram. Trust in the future and skillful business manipulation is the staff on which such so-called mill constructors rest. The writer has positive knowledge of such men and to whom the running of the mill is a novelty. The stock which they indicate by name is unknown to them by sight.

***

The last number of these notes closed with an allusion to dust middlings. The diagram or illustration which was given in connection therewith is here repeated in order to define what is meant by dust middlings. The naming of stocks is so mixed and uncertain that explanation at some length is often necessary in order to make oneself understood.



It will be noticed that what is here named dust middlings is that class of stock which will pass through the No. 9 cloth above, but not through the flour cloth below. Too fine to be treated in the regular way with the other middlings, and too coarse for flour. Efforts are made to purify this class of stock in the regular way by the purifiers. According to my understanding of the case, very little is gained by such means. The stock may be a little more pure, but as an offset the waste is to be considered in estimating the value of the purification. The difference in specific gravity between the stock and the contained impurities is so slight that as yet we are deficient in the mechanical means of making such a separation by means of air currents or sieves. I do not mean to say that the purity of this stock will not be effected by the action of the purifiers in the regular way, but I question the profit of such a process. Mechanically it might work reasonably well. Viewed from a business stand point it will bear investigation. I am aware that the dust collectors keep the stock from the fans inside the mill; and also that the tailings and cut-off from the machines handling this stock are controllable in the direction of its travel. But if special means be used in disposing of this stock or that from the dust collectors of the same machines, there is the additional complication and expense of plant which can not be undertaken except in a few cases, and that when the output is large and means abundant. And again, accepting all these arrangements as possibilities the stock to be so handled would not be very much different from the original middlings going on to these machines, and the middlings themselves would not be greatly improved. Thus, in any event, the result of such a system could not be largely beneficial.

***

With soft wheat this grade of stock is quite bright if not contaminated with other material running in with it from other directions, than from the stock from which it is supposed to be originally taken. In some instances where it is desirable to submit this material to purifying action it is run through a centrifugal reel before such handling, that is, by the purifiers. I know of this having been done in one instance at least in the spring wheat country when the wheat was damp during the year.

The best purifier for the dust middlings is the smooth roll and the following reel or reels. This flour stock is reduced and the bran specks and other impurities are not greatly disturbed. This stock should not be ground too close, as by this means the impurities are pulverized and the floury particles flattened in such a way as to go off with the impurities. There can be no reason for a close grinding in this material. There will be more flour taken from the reel when the grinding is properly done than when it is ground close. What is wanted is to break up the floury particles without submitting anything to a pulverizing action. Aside from the other damage which close grinding does it makes it difficult to finish up this grade of stock on the subsequent reductions. By that means it becomes soft and feathery, and is partially insensible to the action of the following roller reductions. It passes through the rolls without being disturbed, and one reduction merely calls for another, until the tail end of the mill is reached, and even then there is stock going into the red dog from this source which does not belong there. It is not there through deficiencies in the process, but from lack of the proper manipulation of the means at hand. By the most careful and intelligent grinding this same thing will happen in a less degree. It will become somewhat soft and, as expressed before, somewhat feathery. This calls for the introduction of the centrifugal reel in the separation of the second reduction of this grade of material. If there be a third reduction, as there should be, there should be a centrifugal reel there also. Three reductions of this material where the feed is not too heavy and the grinding neither too close or too open, will prepare the remains for the red dog.

The flour from the first reduction of the dust middlings will be next to the patent flour in quality. When one finds this flour specky and gray it may be from two causes other than the character of the original stock. It may be from too high or too low grinding. The cut-off or the tail will show which is the wrong without going to the product before it goes into the reel, which it is not always convenient to do from the point where the flour is discharged. It is not always necessary to change slides to remedy defects in the quality of the products of flour or others. More often when there is not a change in the feed or the texture of the stock a change in the reduction will bring about the desired end.

The Commerce of the United States.

A telegram to the Chicago *Times*, says that the preliminary report of the bureau of statistics on the foreign and domestic commerce of the United States for the last fiscal year will be issued early next week. The total value of the imports and exports of merchandise during the year amounted to $15,469,284.85, being larger than during any previous year in the history of the country. The value of exports of merchandise exceeded the value of the imports of merchandise $100,683,153, as against a similar excess during the preceding fiscal year of $25,902,683. The excess of the value of imports over exports and of exports over imports of merchandise was as follows: Month ended June, 1883, excess of imports, $10,417,120; six months ended June 30, 1883, excess of exports, $46,107,684; twelve months ended June 30, 1883, excess of exports, $100,683,153. The value of the exports of merchandise from the United States during the year ending June 30, 1883, amounted to $823,805,819 as against $750,542,257 during the preceding fiscal year, showing an increase of $73,263,562. The effect of short crops during the season of 1881, consequent upon protracted drought and other unfavorable influences, not only tended to diminish the exports of the agricultural products of the country during the year ending June 30, 1882, but also projected themselves far into the year ending June 30, 1883. It was not until the month of October, 1882, that the exports of domestic merchandise began to exhibit any material increase over the exports of the corresponding month of the preceding year.

During the year ending June 30, 1883, the value of the exports of cotton amounted to $247,326,621, as against $199,812,644 during the preceding fiscal year—an increase of $47,513,977.

The value of the exports of wheat and wheat flour amounted to $174,703,830, against $149,304,773 during the preceding fiscal year—an increase of $25,399,057. The value of the exports of corn and corn meal amounted to $27,736,880, against $29,840,031 during the preceding fiscal year—a decrease of $2,103,151.

The exports of meat products and dairy products amounted to $99,644,621, against $114,463,726 during the preceding fiscal year—a decrease of $14,819,805, and the exports of petroleum amounted to $43,914,028, against $51,232,706 during the preceding fiscal year—a decrease of $6,319,698. The value of imports of merchandise into the United States during the year ending June 30, 1883, amounted to $723,122,666, and was exceeded but once before—namely, during the year ended June 30, 1882, when it amounted to $724,649,574. The amount and value of the separate commodities imported is not given. The report compares the leading imports for the eleven months ending May 31 last, with corresponding imports of same portion of previous fiscal year. During the last fiscal year there was exported $21,623,181 of domestic and $10,197,152 of foreign precious metals, and there was imported of gold and silver coin and bullion $28,489,391, leaving an excess of exports of $3,330,942, against $6,945,089 in the previous year.

The report gives figures of freight charges on grain from Chicago to New York by lake, canal, and rail, averaged annually from 1867 to 1882, showing a reduction by each route of about two-thirds, and states that last year 80.2 per cent of the actual receipts of grain at Atlantic ports was by rail, and 19.8 per cent by lake, canal, and Hudson river. The tonnage of New York state canals fell from 6,442,225 in 1868 to 5,467,423 in 1882, but the aggregate tonnage of the New York Central, Erie, and Pennsylvania railroads increased from 10,476,857 tons in 1868 to 43,586,030 tons in 1882. Ocean steamer rates from New York to Liverpool have fallen from 21.12 cents per bushel of wheat in 1873 to 7.7 cents last year, and 9.8 cents in 1883. Comparison is made between the cost of carrying wheat from San Francisco by sail around Cape Horn and from Chicago to Liverpool. San Francisco's average ocean rate for three years, 1880, 1881, and 1882, may be regarded as properly subject to comparison with rates from Chicago to Liverpool. During these years the average ocean rate from San Francisco to Liverpool was about 39.7 cents per bushel; the average rail and steamer rate from Chicago to Liverpool was about 25.5 cents per bushel, and the average Lake Erie canal, and Hudson river and ocean steamer rate from Chicago to Liverpool was about 19 cents per bushel, making the proper allowance for marine insurance and the expenses of bagging upon shipments from San Francisco to Liverpool and for lake insurance, Buffalo, and New York transfer charges, and ocean marine insurance upon shipments from Chicago to Liverpool. It appears that the average cost of transporting grain from San Francisco to Liverpool by sea is from about 18 cents to about 22 cents per bushel in excess of the cost of transporting grain from Chicago to Liverpool. This represents approximately the disadvantage at which the farmers of California are placed in the London market, in competition with the farmers of states situated east of the Rocky mountains. The report promises an elaborate treatise on the exportation of Pacific slope wheat, via New Orleans, in the annual report on internal commerce.

BUSINESS NOTICES.

A LONG FELT WANT SUPPLIED.

The La Crosse Smooth Chilled Iron Roller Mill—price $125.00. These mills will crush tailings or size middlings for a 100 barrel mill. For particulars apply to JOHN JAMES & CO., La Crosse, Wis.

BOLTING CLOTH.

Don't order your cloth until you have conferred with us. It will pay you both in point of quality and price. We are prepared with specia facilities for this work. Write us before you order. Address

CASE MFG. CO., Columbus, Ohio.

Office and factory 5th St., North Naughten.

STEVENS ROLLS RE-CORRUGATED.

Millers in the west and northwest, who may have Stevens rolls that require re-dressing or re-corrugating, can have such work promptly and expeditiously performed by MR. ROBT. JAMISON, NEENAH, WIS., to whom we have furnished an outfit of specially constructed machinery for this purpose.

THE JNO. T. NOYE MFG. CO.,
BUFFALO, N. Y.

CLUB LIST.

NORTHWESTERN MILLER with

American Miller	1 year	$2.50
London Miller	"	3.00
Scientific American	"	4.50
American Agriculturist	"	3.00
Harper's Magazine	"	5.00
Century (Scribner's) Magazine	"	5.30
Boston Journal of Commerce	"	4.25
Abernathy's Hints on Millbuilding	"	4.00
Emerson's Book	"	2.50

Other publications, not on above list, can be furnished in connection with the NORTHWESTERN MILLER, at a corresponding reduction on the price charged for them separately.

EVEN COUNT.

A point too much neglected by those who buy and use bolting cloth is the importance of having the "count" of the meshes absolutely correct; that is, just so many meshes to the square inch—no more, no less. There is bolting cloth that answers this requirement. And there is more that does not. It may seem a trifling matter, this slight variation in the evenness of the mesh, but when this imperceptible difference is multiplied indefinitely by the thousands of revolutions of a reel, and the millions of particles of flour which pass through it, the difference will become perceptible when the yield is taken, if not before. —*Roller Mill, Aug., 1883.*

And it is just on the above issue that we have been fighting for the past two years. Our Bodmer cloth *counts correctly*, or it goes back to the manufacturer. In points of strength, evenness of mesh and fine finish it ranks first.

Old Socks and the Widow Mills use it; every large mill in Minneapolis uses it; hundreds of millers all over the country say they can depend on it.

It will please you. Write us.

WILLFORD & NORTHWAY,
420 Second St. south, Minneapolis.

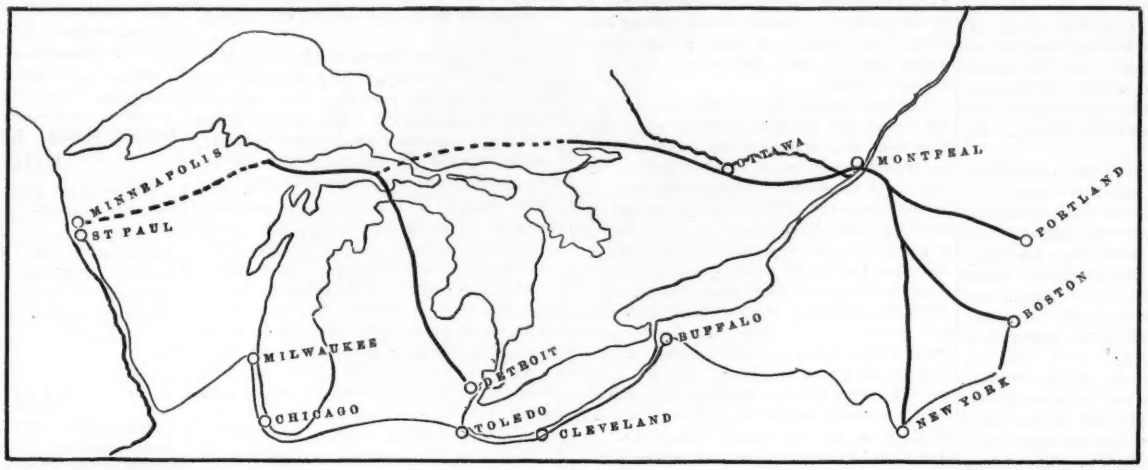
A New Road to the Sea.

The practicability of a through line of rail from Minneapolis to the eastern seaboard via the Sault Ste. Marie, has been discussed for years, and the feeling has been general among railroad men and others competent to judge of the cost of such a line, and aware of the immense traffic awaiting it, that it would sooner or later be constructed. At last the project has taken definite shape and articles of incorporation of the Minneapolis, Sault Ste. Marie & Atlantic railway have been filed in Madison, under the laws of Wisconsin. The capital stock has been fixed at $12,000,000, and of this amount a large portion has been subscribed for by the board of directors, which includes some of the largest business men and capitalists of the northwest. Following are the names of the incorporators who constitute the first board of directors: W. D. Washburn, Thos. Lowry, H. T. Welles, Clinton Morrison, J. K. Sidle, G. R. Newell, C. M. Loring, C. A. Pillsbury, A. C. Rand, W. W. Eastman, Anthony Kelly, C. F. Martin, and H. G. Harrison.

Our map shows plainly the proposed route of the road, though of course we have not tried to show its exact course, as the work of surveying is but just begun. Roughly it may be stated that but 480 miles of road remain to be built to give a continuous line between Minneapolis, Montreal, Portland, Boston, New York, and other eastern points. This uncompleted portion is shown on the map by dotted lines, while road already in operation is shown by full black lines.

From an interview between Gen. W. D. Washburn and a local journalist, we make the following extract showing the advantages which will be possessed by the new road:

"It is unnecessary to recapitulate the disadvantages under which the Minneapolis milling interests have labored for several years past, and especially during the past year, by reason of the summer freight rate against them via Duluth. The Northern Pacific and the Manitoba from many points, make the same rate on grain and merchandise to and from Duluth as to Minneapolis. This makes the haul from Minneapolis to Duluth against us. This disadvantage might be partially overcome if we could get a low rate to Duluth; but the Duluth road being in the control of Chicago roads makes the burden of discrimination against Minneapolis as heavy as possible. This strikes first and most directly our milling interests; but unless some corrective is applied other interests must soon suffer also, not only in Minneapolis but in St. Paul. It is imperative to all our interests that a railroad system be constructed which will place us at least on an equality, both summer and winter, with all other shipping points in this vast region. Now glance at map and note the saving in distance that may be effected by the northern route via the 'Soo' as compared with the southern route via Chicago.



The following are the distances from Minneapolis to various points via Chicago:

	Miles.
To New York	1,370
To Boston	1,468
To Portland	1,576
To Detroit	704

"The distance from Minneapolis to the 'Soo' by the proposed road is 455 miles; from the 'Soo' to Montreal is 545 miles; from Montreal to Quebec is 173 miles; from Montreal to Portland is 297 miles, to Boston 285 miles, and to New York 391 miles. Thus the distances to these points via the northern route and Montreal are resolved into the following:

	Miles.
To New York	1,391
To Boston	1.285
To Portland	1,297
To Detroit	746

"Via the 'Soo' and Ogdensburg they are somewhat shorter on the whole, as follows:

	Miles.
To New York	1,268
To Boston	1,285
To Portland	1,245

"Thus it will be seen that the construction of this road would place Minneapolis and St. Paul in connection with a railroad system that is a natural and inevitable competitor with the system running south of Lake Michigan and centering at Chicago, and effect at the same time an average saving in distances. For instance it is 331 miles nearer from Minneapolis to Portland via the 'Soo' and Ogdensburg than via Chicago, 201 miles nearer to Boston, and 102 miles nearer to New York. With the northern route in operation we could get as low rates to the seaboard as can be given from Duluth, even in summer, or even lower, and the disadvantage of the haul to Duluth would cease to be against us. We shall proceed immediately to work. A large amount of the stock will be subscribed immediately, and two corps of engineers will be placed in the field at once. We shall have the surveys and preliminary work completed by next spring, and be ready then to go to work upon construction. A corporation will be organized under the laws of Minnesota to construct the portion of the road from Minneapolis to the St. Croix river. It will be an entirely new road, crossing the river somewhere between Stillwater and St. Croix Falls. It should be noted that the road will pass for a long distance through the heavy timbered lands of Wisconsin, furnishing both hard and soft woods, and through the heart of Wisconsin's pine region. It will also penetrate the iron districts of Wisconsin and the upper peninsula of Michigan. Minneapolis will thus be placed thoroughly *en rapport* with these important regions."

As the enterprise progresses we shall make further mention of it and thus keep our readers fully informed as to one of the most important railroad enterprises of the age.

NEW YORK CORRESPONDENCE.

It is a curious fact, that although New York is the metropolis of the country, there is little done in the way of flour manufacture; in fact there are only three flouring mills from the Battery to Highbridge.

Hecker, who was the first to successfully combat prejudice against baking powders, has become famous as the introducer of self-raising flour, runs the mills in Cherry street. One of those mills, the Croton, was burned down about a year ago, but it is being rebuilt, and when completed, will be one of the best mills in the country.

Jones' mill is in Broome street, fitted up with the latest modern improvements, and is turning out an excellent article of flour. Paines' mill is in Harlem. It was once a small feed mill with four runs of buhrs, but a few years ago it was fitted up as a flour mill and was kept busy for a time. The only other mills of note outside of feed mills around New York are Jewell's, which is situated at Fulton ferry on the Brooklyn side of the river, and the Kings county mills in Williamsburgh. The former are content to turn out a good family and bakers' flour with the Jonathan mills system, while the latter are supplying the burghers with roller made flour. There are two mills in Jersey, two in Newark, two in Patterson, and in all about fifteen within a radius of twenty miles around this city.

There are only a few millfurnishing establishments, and they sell only old millstones, buhr blocks, or bolting cloths. There is nothing in the way of milling machinery manufactured here, and everything look as primitive as in the days of Oliver Evans.

It is hard to understand why this city is not more of a milling point. In the study of the milling interest in the United States within a cycle of ten years, three facts are patent: first, that there has been an extensive development of manufacture in the west; second, that the same phenomena has been repeated in New York city; and third, that there has been some corresponding decrease of manufacture in the northern and western districts of this state, whence formerly emanated most of the leading brands in the market, while the west now furnishes by far the larger portion of flour used for consumption in the eastern states, and for export. The reasons for this are several, prominent among which may be mentioned the better facilities for transportation afforded to flour than to wheat, and the relatively smaller expense attending the movement of the former, especially by railroads, which are every year diverting from the water routes a greater monthly percentage. A great deal of the flour supplied to the New York market is still manufactured in this state, but it has been noticed that as the western manufacture increased that the state manufacture correspondingly decreased. These remarks, however, have no logical application to the milling interest in this city, since it must be ranked as the great *entrepôt* of the continent, while the cities and villages of this and adjoining states can only be regarded as depots in transit. To manufacture at the least expensive location is important, and that location must be at the very wharf where the grain is, or can be moored for unloading, the haulage being an item of expense which is fatal to profit, under the pressure of competition. So situated, it is estimated that a New York firm can buy grain and manufacture in competition with the west, using the canal routes as avenues of transportation for its raw material. A Christian, or a Pillsbury, or a Washburn, with a dock privilege in New York, would coin money, and the reason that no such mill has been erected is because there is a lack of enterprise. New York is getting to be an old city, and is fast settling down to that quiet conservatism that belongs to age and lack of vital energy. Those who do a milling business here are content with a local trade, without the exertion incident to a larger and more profitable export business. The milling interest in this city possesses many advantages worthy of note which are entirely neglected. California or Minnesota wheat can be made available by New York firms. It can be shipped, milled, and put on the market at as low or a lower rate than can be done by either the Californian or Minnesota manufacturers. This is why the manufacturers in Rochester and other towns in the interior of the state were compelled to limit themselves in production mostly to the demand of their respective local markets instead of intercepting western wheat in transit to be milled and reshipped as heretofore, and so far as manufacture for export is concerned, California, the western states, and New York city, can be made to constitute the manufacturing centres. The wheat and grain storage in and around this city is immense, and there are often as much as 20,000,000 bushels of wheat here at a time. The total storage capacity of the Brooklyn warehouses may be stated in round numbers at about 15,000,000 bushels at one time, but in addition to this enormous amount, large quantities of grain are transferred weekly from canal boats directly to the ships, by means of floating elevators, without going into the storehouses. Those vessels that only take grain as part of their cargo are very often loaded on the New York side of the river, but when the cargo is entirely, or largely grain, the vessel is almost invariably loaded at one of the Brooklyn elevators. The labor of transporting and shipping this immense amount of grain is almost endless. It must be loaded, screened, smutted, weighed, trimmed, and handled over and over again. Modern invention has simplified this the same as everything else, and now a large portion of the work is done by machinery. In measuring and weighing a cargo, the rule is to allow sixty pounds to the bushel of wheat; fifty-six to corn; fifty-six to rye; forty-eight of barley, and thirty-two of oats. When weighed, the grain falls on a sifter underneath the hopper, and is cleansed of dirt and all foreign matter. It is then screened, smutted, and finally brushed. It is then stored or shipped as the case may be; sometimes it is found necessary in consequence of the fact that the grain has become heated or sweated to dry it. This process is carried on by means of large cylinders, through which hot air is continually passed by means of pipes, after which the grain is stored. The new produce exchange is now near completion, and is a splendid structure. The large tower towards Broad street can be seen for miles away, and is one of the first objects to attract a visitor in coming into New York through the Jersey flats near Newark. It is known on the street and on 'change, as the tower of Babel.

I have been talking with several merchants and must say that there is a very evident feeling of hesitation, not to say depression, existing in commercial circles. In most of the larger branches of industry, production has so far gained upon demand as to produce a temporary over-supply, and in some cases this has gone so far as to produce a decline in prices, causing numerous failures and wide-spread limitation of production. In some departments of the foreign trade, too, there has been an over importation, with the result of a decline in prices and losses to importers. Such a state of things is always dangerous. It is especially so when those who have to bear the losses resulting from a consequent decline in prices endeavor to avert the effects by an expansion of credit, instead of adjusting the supply to the demand and restoring a natural equilibrium. In such cases the disease is concealed, and runs on until it becomes unmanagable. Credits become expanded, the market is flooded with unsound paper, the demands of borrowers increase, and at the same time their collateral deteriorates. The banks then become timid, and finally they contract their loans, and a collapse of credit ensues which ends in a panic. It takes some years to accumulate the material for one of these explosions, and when it comes, after a long series of successful years, the débris is to be seen all over the land. Speculation plays quite an important part in this matter. Its function operating as a continual conflict between the two extremes of the market, is to prevent tendencies from running to excess in any one direction, and thereby maintaining a more or less healthy rotation between supply and demand. Instead of the market

Continued on page 188.

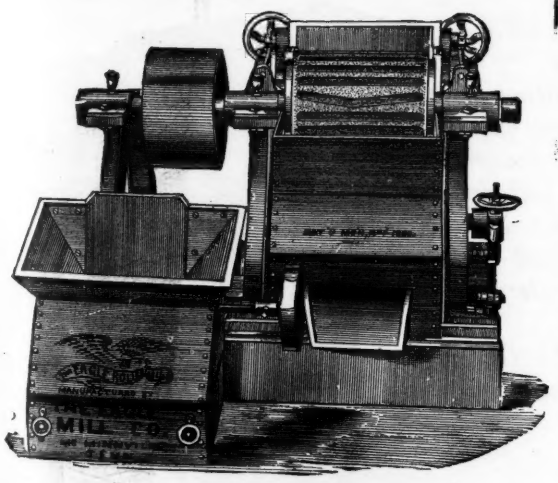
The EAGLE MILL COMPANY

McMINNVILLE TENNESSEE

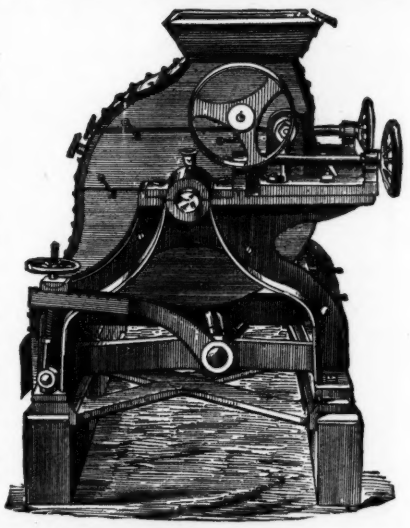
Sole Manufacturers and Proprietors of the

Eagle Stone Roller Mill

—AND THE—



Rising Sun Purifier



The Highest Results and Satisfaction Guaranteed.

Thirty Days' Trial Allowed to all Purchasers.

The ***EAGLE STONE ROLLER*** *has no equal for regrinding either first, second or third Middlings or Bran. Beats any Metal or Porcelain Roll. Guaranteed to do so and Fifty per cent. cheaper, quantity and quality considered. Have hundreds in use and certificates in abundance proving our claims. They grind perfectly cool and even, and are easily kept in order.*

THE RISING SUN PURIFIER

ENTIRELY NEW PRINCIPLES.

No Middlings Purifier on Earth will half-way equal the "RISING SUN" on any grade of middlings. The same machine is the best Scalper ever offered to millers. Has more capacity with less power and space required.

This Machine Will Do More Than Twice as Much Work as Any Other Purifier & Scalper.

Sold for about half the money of any other machine for the same purpose. Thirty days' trial allowed to purchasers. Address

AGENTS: TALBOTT & SON, RICHMOND, Va.
MUTSCHLER & ESSMUELLER, ST. LOUIS, Mo.

EAGLE MILL CO.,
MC.MINNVILLE, TENN.

THE

STANDARD CENTRIFUGAL REEL!

THE LATEST AND BEST.

WE CLAIM

Greater capacity than any other reel of the same size.

The lightest rnnning and easiest handled.

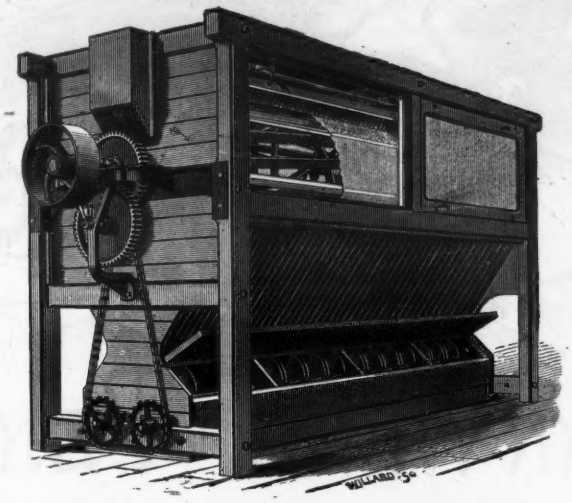
The best workmanship and the greatest durability.

More service from each square foot of cloth and less wear of the cloth than any other reel whatever.

A ten-sided reel on which the cloth can be stretched tight and kept so, which can not be done on a round reel.

THIS REEL HAS

A brush attachment which sweeps each side of the reel perfectly every minute. No other polygonat reel has, or can have, this necessity. It may be used or not, as the material being treated may require.



OUR REEL

This reel contains every feature which experience has shown to be necessary. It has the double conveyors side by side, and the material can be cut off every four inches if necessary. In case of a break in the silk this improvement allows the reel to be run until the miller has time to repair it. The brush can be regulated from the outside while the reel is in motion, to bear on the silk lightly, heavily, or not at all. The feed is automatic and air tight, and there can be no center draft through the cylinder.

We are so confident of the correctness of our assertion that this is the best reel in the market that we will gladly ship it to any responsible party on thirty days' trial and let him be the judge as to its merits.

A FULL LINE OF CAREY'S DOUBLE ANCHOR BOLTING CLOTH ALWAYS ON HAND.

PEERLESS DUST COLLECTOR.

MORGAN SCOURER AND POLISHER.

SEND FOR PRICES.

READ THE TESTIMONIALS.

St. Louis, Mo., July 3, 1883.

Messrs. Kirk & Fender, Minneapolis, Minn.

Gentlemen:---Your favor of the 29th ultimo received and noted. Last February we set out a Throop smutter and put in your Morgan Scourer and Polisher. We have given it a fair test and are satisfied with its workings. We class it as the best Scourer and Polisher on the market and earnestly recommend it to the milling fraternity.

Yours truly,

E. GODDARD & SONS FLOUR MILL CO.

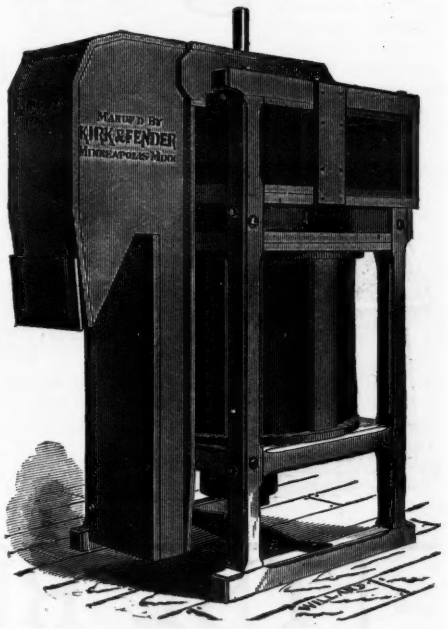
Per Jos. H. Goddard, Sec'y and Treas.

Spring Valley Mills,

Spring Valley, O., June 6th, 1883.

Gents:---Your draft for.....was this day presented and paid. All O. K. Your dust collector is a great success. We are highly pleased with it.

Respectfully, BARRETT & SON.



FOR FURTHER PARTICULARS ADDRESS

KIRK & FENDER, Minneapolis.

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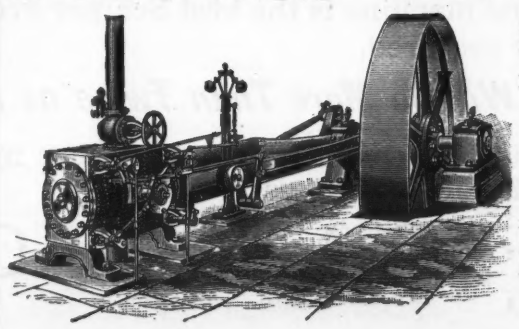
CORLISS ENGINES



25 H. P. to 1000 H. P.

Non-Condensing, Condensing and Compound.

BOILERS.

Robt. Wetherill & Co

CHESTER, PA.

MFG. AND TRADE.

Items appearing in this column are furnished as news by the several manufacturers and millfurnishers interested.

Messrs. Rambo Bros., of Dresden, O., recently ordered 3 Smith purifiers.

Geo. L. Hayes, Piketon, O., is operating his mill on the Case system of gradual reduction.

J. B. Harrison, of Evansville, Ind., has ordered a double set of Stevens rolls of the Noye Mfg. Co.

H. V. Line, Springfield, Pa., is putting in another pair of Stevens rolls furnished by the Noye Mfg. Co.

Recently the Smith Middlings Purifier Co. shipped 12 purifiers to Wm. R. Dell & Son, of London, Eng.

A. C. Godshall & Bro., Lansdale, Pa., recently ordered a set of porcelain rolls from Messrs. Allis & Co.

D. C. Briggs, North Bend, Mich., has purchased a set of porcelain rolls of Messrs. Allis & Co , of Milwaukee.

L. P. Sharpless, of Oxford, Pa., has recently put in a Smith purifier, ordered through the Barnard & Leas Mfg. Co.

W. H. C. Kemp, of Kemp Station, Ind., has put 2 Smith purifiers and a Martin centrifugal reel into his mill.

Messrs. Allis & Co., of Milwaukee, recently sold Gardner & Seymour, of Fulton, N. Y., a set of Allis-Gray belt rolls.

The Rathbun Co., of Deseronte, Ont., are putting in additional Stevens roller mills, ordered of the Noye Mfg. Co.

The Slater Mill Co., of Blanchester, O., recently secured an order from H. M. Oliver, Camp Point, Ill., for a set of Allis-Gray belt rolls.

The Geo. T. Smith Middlings Purifier Co. have recently received orders from the Nordyke & Marmon Co., of Indianapolis, for 14 purifiers.

A. Laugenbacher's mill, Lansing, Mich., is undergoing repairs, a new Leffel wheel of 44 inches being required to drive the additional machinery.

F. S. Ellis & Co., of Hopkinsville, Ky., has placed an order with the Noye Mfg. Co. for a single Stevens roller mill for grinding middlings.

Chas. Huber, of St. Louis, has instructed the Noye Mfg. Co., of Buffalo, to ship Cowgill & Hill, of Carthage, Mo., 5 Stevens double roller mills.

Jno. Webster, the veteran millwright of Detroit, has ordered a double Stevens roller mill of the Noye Mfg. Co. for W. J. Green, Waterford, Mich.

The Geo. T. Smith Middlings Purifier Co. have recently filled an order from the Fargo roller mills, for a No. 3 double purifier and a No. 1 centrifugal reel.

S. F. McDonald, Oxford Mills, Ia., has remodeled his mill and put in the Case system of gradual reduction. He expects to have it in operation in a few days.

The new roller mill of B. Sampson, Crookston, Minn., will be supplied with an 87-inch Leffel turbine, from the works of James Leffel & Co., Springfield, O.

John J. Walterhouse, of Vincennes, Ind., representing the Noye Mfg. Co., of Buffalo, has ordered a double Stevens roller mill for Mayor Collins, at Brazil, Ind.

Murry, Brown & Co., Galloway, Tenn., are re-clothing their reels in preparation for the new harvest and have placed their order with the Simpson & Gault Mfg. Co.

R. G. Shuler & Co., Minneapolis, have the contract for building a mill for A. G. Seeney, at Sioux Falls, D. T., and have ordered 4 Stevens roller mills of the Noye Mfg. Co. for it.

O. H. Hastings & Co., of Oswego, N. Y., have placed an order with the Noye Mfg. Co., for 5 Stevens double roller mills as well as other machinery required to change their mill to the roller system.

Davis & Burton, Cookeville, Tenn., are putting in a new chest, an extra pair of 42-inch buhrs, and the indispensable Champion smutter. The Simpson & Gault Mfg. Co., fill the order.

Henry Tschopp, the well known millwright of Lancaster, O., has ordered for Joel Bowman of Somerset, O., new purifiers and Champion cleaners from the Simpson & Gault Mfg. Co.

W. R. Dell & Son, of London, Eng., have cabled the Jno. T. Noye Mfg. Co., of Buffalo, to ship them a concentrated roller mill, and write that this mill is meeting with great success in that country.

The Case Mfg. Co., Columbus, O., are furnishing Benj. Noble, Aberdeen, Md., with 2 pairs of rolls with automatic feed, and a Little Giant break machine with scalping reel and making three separations.

L. A. Funk, Sigourney, Ia., has lodged an order with the Noye Mfg. Co., of Buffalo, for a 3-break Rounds sectional roller mill and a double mill for bran and tailings, all with Stevens corrugations.

Messrs. Eslick & Bro. are remodeling their mill at Kelso, Tenn. The Simpson & Gault Mfg. Co., have the order for machinery, which includes purifiers, additional middlings buhrs, new reels, cloths &c.

Messrs. Shuler & Co., Minneapolis, have instructed the John T. Noye Mfg. Co. to ship a 4-break Rounds sectional roller mill and a double mill for bran and middlings to Dassel, Minn., where they are building a mill.

The Smith Middlings Purifier Co. have supplied purifiers to D. Close, Norton, Kan., and Peerless Mill Co., Council Grove, Kan., and a Martin centrifugal to Kelley & Lisk, of Leavenworth, Kan., through the Great Western Mfg. Co.

The contract for overhauling the mill of Herrick & Son, at Watertown, N. Y., has been let to the Noye Mfg. Co., who furnish, besides other machinery required, a 5-break concentrated mill and 3 double mills, all with Stevens corrugations.

W. G. Gage & Co., of Fulton, N. Y., are enlarging the capacity of their mill, and have placed a contract with Messrs. Edw. P. Allis & Co. for 9 pairs of Allis-Gray belt rolls, purifiers, centrifugal reels, and other machinery to be used in the change.

The Wamego Milling Co., Wamego, Kas., have awarded a contract to Messrs. Allis & Co., for the erection of a complete mill with a capacity of 150 bbls. Allis & Co. furnish everything, including a full line of Allis rolls, and a 14x42 Reynolds-Corliss engine.

The Geo. T. Smith Middlings Purifier Co. have recently supplied H. Schmebly & Co., of Dartford, Wis., with a double purifier; the Nashville Mill Co., Nashville, Tenn., with 6 purifiers; Thos. Jones & Co., Columbus, O., with 1; and Wm. G. Gage & Co., Fulton, N. Y., with 4; all the above were on order from E. P. Allis & Co., of Milwaukee.

Maher & Grosh, Toledo, O., have on exhibition in their window a 10-inch dirk made for a gentleman who resides on the coast of Africa, after a pattern of his own. The blade was ordered to be made so strong "that when it went into the skull of a Kree boy it would not break." It has attracted a great deal of attention.

Coffey, Woods & Co., Lewisburg, Tenn., are aiming to keep in advance of the old style millers, and propose to hold their own against all opposition. They have ordered from the Simpson & Gault Mfg. Co., an additional middlings mill, centrifugal reels, scalpers, purifier, &c.; in fact all the machinery necessary for making flour on the most approved process.

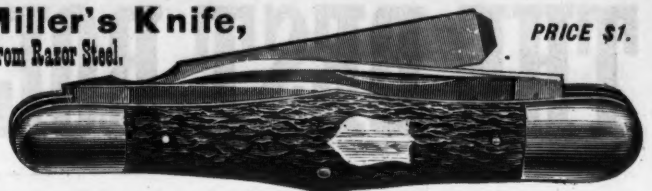
J. W. Wilder, of Huntingdon, Tenn., is of a progressive turn of mind and proposes to rival the best mills in the south. He has ordered the popular Champion brush machines, Economic flour packers, Martin centrifugals, bran dusters, purifiers, additional reels and gearing together with rolls for finishing, from the Simpson & Gault Mfg. Co., Cincinnati. O.

No mechanic can afford to use a poor tool of any kind, and this is particularly true of the pocket knife, there being no excuse for the use of a poor one. Perhaps no men test a knife so thoroughly as the cattle men on the great plains, and when one of them—W. C. Barnes, of Holbrook, Ariz.—writes to Maher & Grosh, of Toledo, O., as follows, it means something: "This is the eighth knife I have had of you. They are the best knives I ever saw, and I can't lay mine down in the corral but some vaquero, with no fear of God, man, or devil, 'nails' it."

The Miller's Knife,
Hand Forged from Razor Steel.

PRICE $1.

Soft or flawy blades replaced FREE.

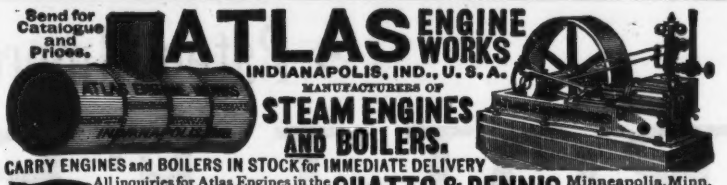


The cut shows our new knife having two blades and a strong steel screw driver. Price, post paid, $1. Every miller has times daily, when he would give all his "old boots" for such a knife as this. Blades are *our best*, oil temper and file tested. Same knife, with file in place of screw driver, $1, or with only the two blades, 75¢. Our strong jack knife, 75¢; boy's knife, 25¢ to 50¢; ladies two blade knife, 50¢; hunting knife, $1; gents, fine pen knife, $1. Forty page list free, also, "How to Use a Razor."

MAHER & GROSH, 79 SUMMIT ST., Toledo, Ohio.

Send for Catalogue and Prices.

ATLAS ENGINE WORKS
INDIANAPOLIS, IND., U. S. A.
MANUFACTURERS OF
STEAM ENGINES AND BOILERS.



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SHATTO & DENNIS, Minneapolis, Minnesota.

ESTABLISHED 1834 **SNOW'S WIRE WORKS** ESTABLISHED 1834.

SUPERIOR QUALITY OF

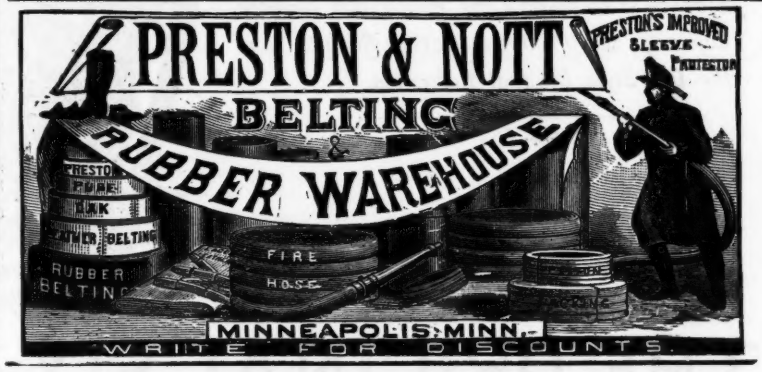
Tinned Wire Cloth and Wire Belting Cloth

FOR BRAN DUSTERS AND FLOUR MILLS.

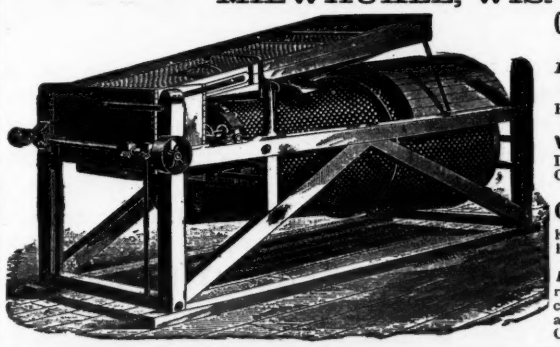
Send for Samples and Prices. Wire Cloth and Wire Work of every description manufactured by

JOHN SNOW, 69 and 71 Exchange Street, ROCHESTER, N. Y.

PRESTON & NOTT
PRESTON'S IMPROVED SLEEVE PROTECTOR
BELTING & RUBBER WAREHOUSE



Cockle Separator Mnfg. Co.
MILWAUKEE, WIS.



General Mill Furnishers
MANUFACTURERS OF
Kurth's Improved Pat.
COCKLE SEPARATOR,
Built also in combination with RICHARDSON'S DUSTLESS
Wheat Separators.
Large Capacity combined with Good Quality of Work.
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GRAIN CLEANERS,
Fully Guaranteed to give the Best of Satisfaction.
Pott's Patent *Automatic Feeder* for Roller Mills, Purifiers, etc., very simple and cheap. Perforated Sheet Metals at low prices. Send for Circulars and Catalogues.

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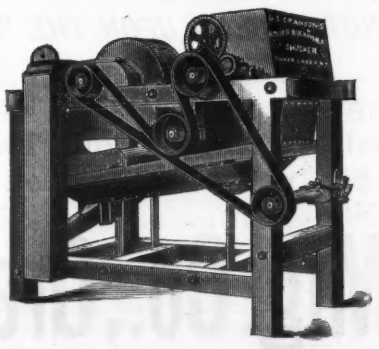
Silver Creek Roller Buckwheat Shucker.



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Every Machine Guaranteed

To Give Satisfaction or No Sale.

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SILVER CREEK, N. Y.

THE BEST ROLL IN THE MARKET!

RICKERSON'S

Patent Improved Noiseless

ROLLER MILLS!

IMPROVED

Because it Requires Less Power, has Greater Capacity and Produces Better Results than the Old Style Gradual Reduction.

Requires Less Power

Because There is Less Weight to Drive, and a Greater Leverage Obtained.

THE ORIGINAL SIX-INCH ROLLER MILL.

Our six by twenty rolls weigh 175 pounds each, making 700 pounds to drive in a double set roller mill, as against 1800 pounds in the old style mill; this fact enables us to run with greater speed with no danger of hot journals, hence our greater capacity.

Produces better results, because there is less Pulverizing and Better GRANULATION, the point of contact being much less on a SIX-INCH ROLL than the old system; the STOCK BEING KEPT LARGER and more middlings produced on each reduction.

It is a well established fact that the object in gradual reduction milling, is to make as large a percentage of middlings as possible, and we claim to make MORE MIDDLINGS from a bushel of wheat THAN ANY OTHER ROLLER MILL, and we are prepared to prove our claim. The more MIDDLINGS the greater percentage of PATENT FLOUR, and better COLOR of ALL grades.

We build the only Roller Mill with **PATENT EXHAUST ATTACHMENT** for taking away all GENERATED HEAT, thus doing away with the GREATEST ANNOYANCE that millers have experienced in running the gradual reduction system, at the same time keeping the stock cooler as it passes to the Reels and Purifiers, consequently the separations are made more easily. This is an improvement that large as well as small mills will appreciate.

We use nothing but the Ansonia Chilled Iron Roll, with steel journals, ground, and run them entirely with LONG belts. With a feed device for throwing out and in easily, with a leveling device that is positive and perfect, and an adjustment so entirely positive, that feed can be stopped or cut-off, and put on again without re-adjusting rollers.

WE DO NOT DEPEND UPON THE STOCK TO KEEP OUR ROLLS APART.

We have procured the services of the well-known millwright, Mr. J. M. Finch, and are prepared to furnish plans for our Gradual Reduction system on short notice, and fill orders for our Mills promptly.

We make both Corrugated and Smooth Rolls, Twelve, Fifteen Eighteen and Twenty Inches Long and Six Inches in Diameter. Prices sent on Application.

Correspondence solicited. Address,

O. E. Brown Mfg. Co., Grand Rapids, Mich. U. S. A.

Minutes of the Dust Club.—XVIII.

BY THE SECRETARY.

In the absence of Jack Stoneman, who was absent, making arrangements for the erection of a new mill on his Dakota farm, Bro. Grist was invited to take the chair, which he did.

Bro. Buhrstone: "Bro. Slade made a remark at our last meeting to the effect that the millstone was not yet wholly discarded, and that several runs were yet in use in the spring wheat section; this is a fact and there are not over a dozen mills in the whole country where the millstone is discarded, and those that have done so, would be better off to have them in. In the same way some millers discarded the ending stones, and it is a patent fact that since they did so their flour has lost its character on the markets.

"It is a mistaken notion that some millers have, that wheat can be cleaned better by successive breakings, scalpings, etc., than to make any attempt to do it before it goes to the rolls. Nothing can be more absurd. There is no reason for it; the better the wheat is cleaned before going to the rolls, the less work the scalpers and purifiers will be called upon to do, and consequently the better the work. Then again on the other hand, a most important thing is overlooked, and that is, that the starch, which is the first part of the grain that becomes flour, and consequently, the most liable to meet with the dust and dirt of the wheat, is more liable to absorb dirt than the glutenous part, and consequently the flour from the first break is of a very poor quality. This would not be the case to such an extent if the wheat was thoroughly cleaned, as the first and second break-flour would not have so much dirt to come in contact with, and hence, by thoroughly cleaning the wheat, there can be a much higher percentage of first-class flour made, and the bakers' grade will be much improved. There is comparatively little known of the laws which should be made to operate in cleaning grain.

"In the examination of a bushel of wheat as it comes from the farmer, the first thing to meet with observation is the number of foreign seeds to be found, such as cockle, oats, peas, mustard seed, clover, garlic, smut balls, etc. All these must be removed before flour can be made from the grain. Many question whether barley would hurt the flour, but as only pure wheat flour is sought it should be free from everything else unless adulteration was intended.

"No grain contains as much gluten as wheat, therefore it should not be mixed with it. The other grains, besides, differ in size, density, and form, from wheat, hence it may be seen that they can be separated from each other; garlic coming nearest in size and weight to a grain of wheat.

"There are several scouring machines in the market; many of them will completely divest the wheat berry of the fuzz on the small end of the grain, but act so harshly on the bran that it becomes chipped and weakened.

"Ending stones are considered best for this purpose. All bogus kernels should be removed, and 'grown' grains should be so acted upon as to completely remove them, as they deteriorate the value of wheat for milling. If wheat were properly cleaned there would be no need of purifiers, or its duties would be greatly lessened to say the least, but since the introduction of purifiers, a great deal of attention has been attracted from the grain cleaning machinery, and consequently many purifiers fail because they are required to do work which the scourer or brush should have done before them. To be successful in new process milling, the miller must 'begin at the beginning,' and the miller must have first-class cleaning machinery and enough of it, so that the purifier will only have to do its own work and not the work of the smutter, of the separator, or the scourer.

"The grain of wheat should fall a distance of several feet in subjecting it to a blast or suction. The heavy grains will acquire more momentum than the light grains or the impurities, and they fall behind. A fan near the end of a wide spout ten feet in length will do excellent work in separation. The impurities larger than wheat should be first removed by means of riddles or screens, which should be made to vibrate. The most difficult foreign seed to remove is onion, and next cockle. The onion seed is about the same size as a grain of wheat and is so near its weight that if a strong blast of air was used many small grains would be lost, and as a small grain contains the same amount of nutriment in proportion to its size as a large one, the loss would be entirely too much."

Bro. Coborne: "I entirely agree with Bro. Buhrstone on his remarks on wheat cleaning, and I must say that I am very much afraid that the attention of millers is directed from this important part of milling to that of rolls and the separations. In order to understand fully the importance of thoroughly cleaning the wheat, let us examine the system of milling adopted in Hungary. The system was brought to its highest perfection in and around Vienna, from which it afterwards extended to Buda-Pesth. It must be understood that the Hungarian wheat is very hard and brittle and it would be next to an impossibility, if ground low, to clean the product, resembling in this way our spring wheat.

"The first semolina was made in the early part of the present century and was sold under the name of 'Wiener gries.' At that early date of new process milling, high grinding was quite simple. The wheat was broken and passed into a bolter at the end of which stood a man with a riddle to separate the semolina from the bran. The wheat was first broken or split, and the result is dark flour, breaking flour, semolina, etc.

"If the wheat be reduced to semolina by splitting three times, the quantity of dark flour will be small, but at the same time the quality of the flour gained by the regrinding of the semolina and middlings will never be so white as by splitting five or six times. After each splitting the flour is separated off, the semolina and middlings are cleaned as they are made, and the splittings themselves pass on to the next stone. After the wheat has been thoroughly cleaned it is conveyed from the spouts to the stock hopper, and thence to the millstones. These consist of three pairs of four-and-a-half-foot stones. The eye of the runner is large, generally eighteen inches in diameter, and the stones make about one hundred and thirty revolutions per minute.

"The wheat is generally split in halves lengthwise in the first break, but even this split produces a small quantity of flour, bran and middlings. The meal as delivered first from these three pairs of stones, is elevated to a chest with two reels each fifteen feet long and three feet in diameter, covered with No. 14 wire all the way through. This reel separates the split wheat and some particles of bran from the semolina, middlings and flour, there being but a very small quantity of the latter, and that being of a very dark color. The split wheat in passing out of the end of the wire, falls into an apparatus where it is subjected to a current of air thus separating it from the bran. This split wheat is then passed to a second breaking stone, and the remaining meal which consists of semolina, middlings and flour is spouted into another reel of the same construction as the first one, this is called the intermediate reel, and is covered with strong silk one half of which has 42 meshes and the balance 46 to the inch. The semolina, mostly of larger sizes, is thus passed out of the tail of the reel, and the flour and middlings mixed together fall into the hopper under the reel. The semolina is sent to a semolina cleaning machine with a long shaker containing three silk sieves, to be sized and cleaned. The mixed flour and middlings descend into another reel of the same diameter as those already described, but covered with Nos. 10 and 11 silk. The flour thus separated is packed into bags and called first breaking flour. The middlings are elevated into a reel of similar form having four sizes. The first size is generally white and free from specks, and is either collected into bags or conveyed to a small hopper. A similar arrangement is adopted with the remainder and each lot is marked respectively as first breaking middlings, No. 8, No. 7, No. 6 and No. 4.

"The limited quantity of very small semolina or tailings coming from the middlings size, is conveyed into a semolina machine for semolina of small size, belonging to the second breaking. It will be seen that the first breaking process is somewhat complicated and the machinery consists of three pairs of stones, two wire reels, one intermediate reel, one flour and one middlings reel or grader, one semolina cleaning machine, and middlings cleaning machine. The great question by this mode of milling is, to which part of the grain do the several products belong? The flour obtained from the first grinding will contain fewer branny particles.

"The fine middlings are mostly composed of small fragments of the flour substance, and in the process of breaking fall from the inner part of the grain and become polluted by the admixture of branny particles of equal fineness. If these are removed by the middlings purifier, fine middlings are obtained, which, in consequence of coming from the inmost part of the grain are called core middlings. The coarse middlings, and the still coarser *Schrot* are fragments, which the larger they are, the more certain they are to be overlaid with portions of the layer of gluten and the bran and germ. They are consequently of a much darker color than pure, middlings. These coarse middlings are put through a purifier. If during the preliminary grinding, germs get loosened from the grain, they arise in proportion to their size, for the most part uninjured amongst the coarse middlings, to which they impart by their yellow color, a speckled yellow appearance. The product of the preliminary grinding is separated and the middlings purified, so that it will be seen from this, that grain cleaning plays an important part in Hungarian milling, and for this, as well as the more important reasons that I have given, I think that separation, scouring, brushing, polishing, and, if possible, decortication, should play a more important part in American improved milling, and it will be found to pay every time."

Bro. Sullivan: "I'm very glad that this brother, as well as Brother Slade, has given us some views on milling. I trust by this time that the latter is familiar with American methods."

Bro. Slade: "I shall be very happy to give you my views on improved buhr milling at our next meeting, but at present I think it is getting late and will have to be excused."

Bro. Coborne: "I should be pleased to hear Bro. Slade on improved buhr milling, and I trust he will favor us at our next meeting. I don't believe we should lose sight of the subject altogether. There are several buhr mills turning out a good product yet."

Bro. Dunn: "It is getting late, and—

Bro. Grist: "And the meeting stands adjourned."

The Roller Fever.

As showing the feeling of a large class of English millers and milling engineers on the adoption of rolls, we reproduce here an article prepared by Messrs. Higginbottom & Stuart, milling engineers of Liverpool, for the information of the British milling public, and published with the above head:

"Do not be made to believe that because rollers are good for one or two purposes that they are therefore good for all. It is simply rank quackery to cram rollers down the throats of the milling public, and to pretend that they alone are the cure for all the ills of milling.

"It is certain that rollers are indispensable for the extraction of germ and for the treatment of certain intermediate branny products; they are excellent to assist in the preparation of pure middlings, but they cannot be used to the greatest profit for any other purpose. We warn millers not to be persuaded to throw out their millstone machinery for the purpose of adopting entire roller mill systems, which are simply low grinding by rolls, and which are but little in advance of low grinding by millstones. The profitable manufacture of high class flour can only be accomplished by gradual reduction, combined with a careful extraction of the bran and germ before the bulk of the flour is made.

"It is a fact that many thousands of tons of the finest flour ever made has been produced by millstones.

"There is no reason why millstones should be dispensed with for flour making. Give them their legitimate work and there is no machine in the market which can deal with all varieties of wheat so profitably.

"Millers should remember that in this country all kinds of wheat are received, and that the hardest as well as the softest wheats must be treated. The true function of the millstone in the future flour mill is to deal with thoroughly pure middlings free from germ and bran, and to perform the final grinding or softening of offals; for both of these purposes the millstone stands without a rival.

"Study the following examination of the comparative efficiency of smooth rollers when compared with millstones for reducing pure middlings to flour: It is possible to produce middlings practically free from bran and germ, and, for the purpose of a common basis of comparison, take a sample of pure middlings which will pass through a silk cloth of 64 meshes to the inch, but which will not pass through silk cloth of 68 meshes to the inch, the object being to reduce these middlings into marketable flour such as will find a ready sale at the highest price. There are three tests by which flour is commercially judged: 1. The color of the flour. 2. The strength of the flour, as shown by the size of the loaf or the quantity of bread produced. 3. The color of the bread.

"The first test is that used for ready comparison, while the latter two tests are finally resorted to in practice, because the market value of the flour depends upon them alone.

"If the nature of these three tests are examined, it is found as regards the first test, that the color of the flour depends upon the degree of fineness of the particles of the flour. Suppose that it was possible to reduce the middlings into flour of a size which would just pass through silk cloth of 134 meshes per inch, and that the flour would not pass through silk cloth of 140 meshes per inch. Such flour would probably form the coarsest which would be acceptable on the market. Again, suppose that the flour produced would all pass through a silk cloth of 160 meshes per inch, and that it would not pass through a silk cloth of 170 meshes per inch, it being understood that in ordinary practice it is not usual to use silk cloth finer than 160 per inch. If these two flours, made from the same quality of pure middlings, were placed side by side, it would be seen at once that the finer flour was the whitest in color, thus showing that their color depends upon the degree of fineness of the particles of the flour.

"If the above mentioned second and third tests were applied to the two flours above described they would show no difference whatever, providing that the flour cells had not been broken, crushed, or abraded during the reduction of the middlings into flour.

"This fact opens up a question of great interest to millers, viz.: What is the nature of the flours which would be produced from such pure middlings by the three types of flour producing machines which are most used in modern practice, *i. e.*, millstones, disintegrators, and smooth rollers?

"Examining the action of these three types of machines we find that the millstones have a shearing action, that the disintegrator has a percussive action, and that the action of the smooth rollers depends upon the manner in which they are used. If they are worked without differential speed, then the action is entirely crushing; if they are worked with differential speed then the action is both crushing and abrading, or frictional.

"Now that machine is the most economical and the most perfect in its action which will give in one operation the greatest amount of flour, the particles of which will pass through silk cloth 134 meshes per inch, but which will not pass through silk cloth 170 per inch. It is quite obvious that if the middlings are not reduced in size so as to pass through the 134 cloth, then they must be again treated on a second reduction and at a second cost.

"On the other hand, if the flour produced at the one operation is made so fine that it not only passes through 134 cloth, but also passes through a much finer cloth than 170 per inch, then in that case a large expenditure of time and money has been incurred for which there is no return.

"It is undoubtedly a fact that the millstone has proved so far to be the machine which will best satisfy the conditions laid down above. Of the three types of machines the disintegrator probably produces the roundest and freest flour, but its work is not so even as that from the millstone, and the power required is greater than that used by millstones or rollers for the same weight of flour produced.

"This fact practically puts the disintegrator out of the market.

"A pair of millstones at one operation will easily reduce 60 to 80 per cent. of the middlings into flour which will pass through silk cloth 134 per inch. Smooth rollers with differential speed as ordinarily used will not reduce in one operation more than 30 to 35 per cent. of the middlings into flour which will pass through silk cloth with 134 meshes per inch. Moreover, a larger percentage of the flour produced by the smooth rollers will pass through silk cloth 170 per inch than is the case with the flour from the millstones, which accounts for the comparative whiteness and softness of the roller flour.

"These facts at once exhibit the superiority of millstones as flour producers when compared with smooth rollers.

"Again, if the smooth rollers are used without differential motion the meal issues in cakes, and it becomes a necessity to use a detacher after the rolls and before the dressing machines, thus entailing two operations.

"The flour from rolls with differential motion is simply rubbed off by friction, and without differential motion it is crushed to a paste. In either case the resulting flour is deficient in that round, granular, free, lively feel which is the characteristic of millstone flour, and which is so much prized by professional bakers, to whose judgment the miller must eventually defer.

"There is another phase of the question in which the millstone excels, all the residue which will not pass through the 134 silk cloth must be treated a second time, and as this residue is always found to contain more or less impurities which can only be removed by purification, it becomes of the greatest consequence that the residue should be in a condition which will admit of its being repurified. It is here that the millstone again shows its superiority, because the residue therefrom can be repurified, whereas it is well known that the roller mill residue is flattened out, and that it is rarely in a fit state for repurification.

"It is owing to this fact that purifying is totally neglected in certain roller mills after the first reduction of the middlings, to the consequent detriment of the flour produced from such residue.

"In the face of the above facts, it is a pertinent question to ask: What is the reason so many millers have thrown out their millstones and adopted rollers for reducing their middlings? The answer is, because smooth rollers seemed to offer a ready way of gaining an advantage without expensive preliminary reduction and purification of the middlings. This presumed advantage has only been a seeming one, as many millers know to their cost. It would have been much better if their money had been spent in producing pure middlings, which could have been profitably reduced to high class flour on millstones.

"The whole art lies in the proper preparation of the middlings, and to this end there are really no short cuts in gradual reduction milling. Every stage must be carefully considered on its own merits, always keeping in mind that every machine which will reduce the middlings to flour will also reduce a proportion of the bran and the germ. It follows from this that the great object of the miller should be to make as little flour as possible until as much as possible of the germ and bran have been eliminated."

E. D. Monger has bought the old mill site and water power on the Wisconsin river at Kilbourn City, Wis., and is erecting a 75 barrel stone mill. G. M. Marshall & Son, of the same city, furnish him two or more of their 60-inch water wheels and other machinery. The citizens of Kilbourn city naturally congratulate themselves that some one has at last been found to utilize this valuable power, and entertain the belief that possibly this step will lead to enterprises even more extensive and to the full development of the natural advantages with which the place is endowed.

A late number of the Melbourne, Australia, *Argus*, says: "Reports from all the agricultural areas in Victoria and south Australia, continue to be of the most favorable character, splendid rains having fallen in all directions, and should we be favored with genial spring weather, the most satisfactory results may be anticipated."

Facts About Bolting Cloth, Grits Gauze and Wire.

BY S. C. ALPER.

Up to the beginning of the present century, two systems of separating bran from the flour were in use in Europe and this country. Cylinder bolts were chiefly used in America, England, and France, and wire cloth, if indeed it can be called cloth, was used upon the bolts. While in Germany and Austria the shake sieves with woolen cloth were the kind chiefly in vogue. Both systems were very defective, very complicated and did very poor work. The wire was liable to oxidize thereby lessening the yield, and the shake bolts gave very deficient results, as the meshes were uneven, and the cloth itself was liable to be very much affected by the temperature. About the time of the American war, the millers of this country were in a great strait, because the supply of cloth was cut off considerably, and the French suffered similarly, during the time of their own revolution, so that necessity, which has the reputation of being the mother of invention, prompted both peoples to try every possible expedient to obtain cloths, and as the Hollanders traded considerably with Americans at that time, some of the factories in Holland that were making the fine fishing nets for the people were called upon to try their hand at an article that would answer the purpose of flour bolts. This they did, but twisted the meshes, so that this cloth was improved upon from time to time, until finally it reached a state of perfection corresponding with our No. 8 silk of the present day. The Holland factories continued to improve, and in the course of time found themselves unable to supply the demand upon them for the article they were making, and had in consequence to increase their facilities, so that about the year 1832, Bodmer of Zurich, took into his head that silk was just the article and he determined to try the experiment. The result was that his cloths met with great favor wherever used, so that it is to America the world is indebted for this, among the other great improvements in milling. Dufour & Co., was the next firm to enter into the business of manufacturing silk bolting cloth, and the rivalry and competition that sprung up caused the two firms to try to surpass each other in the quality of the article, and while the Holland factories could not turn out anything finer for a long time than No. 8, the Swiss firm manufactured an article as fine as No. 16. This business has confined itself in Switzerland to a few districts, all bordering on each other and every attempt to take it beyond that region has failed, the cause of which lies in the quality of the water, which exercises great influence on the silk, and plays a very important part in its manufacture. Silk bolting cloth is woven from raw silk, either yellow or white, and the fineness of the threads and methods of weaving it vary widely, the loop and chain threads which entwine across the other threads being considered the best. This method gives it much strength, and the looped threads are not liable to change their position. A regular texture in bolting cloth is desirable and that with irregular meshes is most objectionable. In examining cloth, it is best to hold it up to the sun to see if the meshes are regular and uniform, and the spaces between the meshes are free; the cloth should be fine and silky to the touch, not rough. There should be no broken threads nor minute hairs to be seen sticking through, nor should any one thread be thicker than another. It is very desirable that there should be an uniformity in the threads as the eveness of the meshes depends on this and the effects of temperature will be less visible.

Bolting is as old as the Pharaohs, as we find evidences of the operation on the tombs in Egypt, in which country the sieves were made of papyrus and rushes. We also find allusions to fine meal in the scriptures, which goes to show that there was some kind of a separation, while Pliny is replete with notes on grinding and bolting, as well as the different qualities of flour made, but it seems that up to a comparatively late period the hand sieve was the implement chiefly used. The Spaniards, always an æsthetic people in the matter of their diet, elaborated the mode of sifting in Europe, as may be found, even at the present time, in many of the mills in Mexico and Central and South America.

Mr. Stephens, in his very elaborate and admirable work on Central America, gives a description of a grist mill in Yucatan, of which he said the flour manufactured there made a very tasty and excellent biscuit or breakfast roll. There were four kinds of flour as early as Pliny's time, which he designated by proper and appropriate names, the finest of which he called "pollen." The hair hand sieve was not the only method used in his day, as we find that linen and woolen cloths were also used. The mechanical bolt was the next system that came into use, and was driven by the power in the mill, the same as we do at the present time. The wool used for bolting cloth was generally sheared seven years before being woven. It was then well washed in some preparation known to the people of those times. It was spun to a very fine and even thread and was then put through hot water to prevent any shrinkage before being woven. The English cloth was considered the best, as it was stiffened by some means unknown to the Germans, and it was found to last a great deal longer.

Daniel Kraft, of Ostra, near Dresden, made the best German cloth, and every mill was obliged to pay him a dollar to help him carry on his factory. It is astonishing to what perfection this business has arrived in the last half century, and even within the last ten years since improved milling methods have changed the systems of bolting, the different factories have not lost ground, but have been alert in supplying each want as it arose, and now grits gauze is one of the articles turned out, which is stronger and coarser than the cloths used on the regular flour reels. There are several methods used in weaving, but the one we mentioned, the loop and chain threads, which entwine the cross threads is considered the best method, as the threads are held more securely and the meshes are less liable to be affected by the stretching of the cloth. The system of numbering is from 0000 up to 16 or 20, according to the fineness, but a much better way would be by the number of threads to the inch, from the coarsest up to the finest grits gauze, extra strong is generally used for middlings and its numbers correspond with silk cloth about as follows, running in numbers from 16 to 68: No. 16 grits gauze corresponds to 0000; No. 20 to 000; 26 to 00; 34 to 0; 44 to 1; 50 to 2; 54 to 3; 58 to 4; 60 to 5; 64 to 6; and 68 to 7. This is not based on the comparison of the numbers and size of the meshes, but on minute observations of the results obtained, the size of the meshes varying on account of the difference in the thickness of the thread, but some brands of grits gauze are actually as strong as wire, and these brands have their special application in the mill. All cloth, whether wire or silk, should be stretched equally, but grits guaze should be carefully looked after in this matter, as it is more liable to bag, and the meshes to become stopped up in consequence of the thickness of the threads, which should be brought to equal tension. If there are places not fully stretched they should be wet with a sponge and afterwards rubbed with a dry woolen cloth. Particular care should also be taken in stitching the cloth, and a fine needle should always be used, as the threads of the warp are so close together that the needle frequently pierces a thread. Long stitches therefore are preferable.

The meal or chop should be of as even a temperature as possible. If it enters warm and damp, condensation is produced and the meshes are liable to get stopped up, and as it is always a damaging process to clean the cloths, this should be avoided. At present there are several factories turning out bolting cloth, and there is great trouble experienced in the numbers, as a No. 9 of one factory may equal a No. 10 of another. To keep the bolt in good order it is only necessary to use the sweep, with which most millers are familiar. It is made by sewing a breadth of cotton cloth by the edge to a small rope, long enough to reach the whole length of the bolt. This is hung over the reel on the descending side, in such a way that it will drag lightly on the bolting cloth as it revolves. This sweep should be so arranged that it could be let up or down at pleasure, as a continual dragging would be liable to injure the cloth, and an occasional application is quite enough. The cutting up, stitching and fitting the cloth on the reel is quite a nice operation, and one that is not thoroughly understood. We will give all the details in a future article.

FOREIGN.

A correspondent of *Der Walzen Mueller* writes to that paper: "The export of flour from Hungary to the markets of western Europe is really an important business, and continues without interruption. In Munich an account was taken of the arrival and transit of flour and milling products from Austro-Hungary through Bavaria to upper south Germany, and, also, of that to Switzerland and France, through the direct channels of trade, and it was found that from the beginning of January of the present year to the end of May, 30,000 tons was the amount thus exported. In the corresponding period of the previous year, 12,000 tons of the same products were exported through the same channels, and during the same months of the year 1881 the amount was only 10,000 tons. Seven-eighths, at least, of the quantity mentioned was made from grain raised in the provinces of Hungary, and it is thereby made clear how great an influence a favorable harvest would have upon the product of the Hungarian mills and the export trade, so that the heavy import tax imposed by the German manufacturers will do much damage." To Great Britain, Holland and Brazil large amounts were also exported, the point of embarkation by sea being the port of Fiume on the Adriatic.

*

It is reported that there were no shipments of wheat or flour from Australia to Great Britain during the month of July.

*

Crops in Scotland are reported lighter than in 1882.

*

The minister of agriculture in Paris has given the following amounts as the yield of the principal milling grains in France from the harvest of 1882: Wheat, 335,921,181 bus.; rye, 78,089,522 bus.; maslin [grain mixed in raising—wheat, rye, etc.,] 19,973,136 bus. No such yield has been obtained in that country since the harvest of 1874.

*

In Ireland crops are reported in good condition, though some three weeks of unsettled and rainy weather in July did considerable damage, as much grain became lodged.

*

July reports from the south of Russia pronounce the condition of wheat, rye, and barley as very favorable. In some districts excellent yields were looked for.

*

The following July reports, collected by *Die Muehle*, from different portions of Germany give a general insight into the crop yield of that country: Königsberg.—On account of late sowing the growth of grain was at first somewhat backward. From the middle of June on, however, more favorable weather prevailed, and an average crop will be harvested. Dantzic.—An average crop is hoped for; the growth of straw is small. The price of grain, on the whole, is low. Potsdam.—The prospect is not good; wheat standing thin on the ground. Frankfort.—The growth of winter wheat is short, and it stands thin on the ground; the yield of rye will be less than usual. Bromberg.—In general winter wheat escaped the hard frosts nicely, and the prospect is excellent. The heads of early-sown rye are unusually large. Oppeln.—Peasants are well content with the prospect. Wheat and rye promise at the least an average crop. Magdeburg.—To the south and north wheat stands well; northeast of here the lack of rain has caused much damage. Merseberg.—On account of slight snowfall the past winter, fall wheat came out thin and weak in the spring, so that the berry is small and shrunken. Erfurt.—The spring wheat promises well; in some localities, hereabouts, excellently. Wiesbaden.—Winter wheat yields only a small crop.

*

In Jonitz, near Dessau, a large flouring mill and all the adjacent buildings were recently burned.

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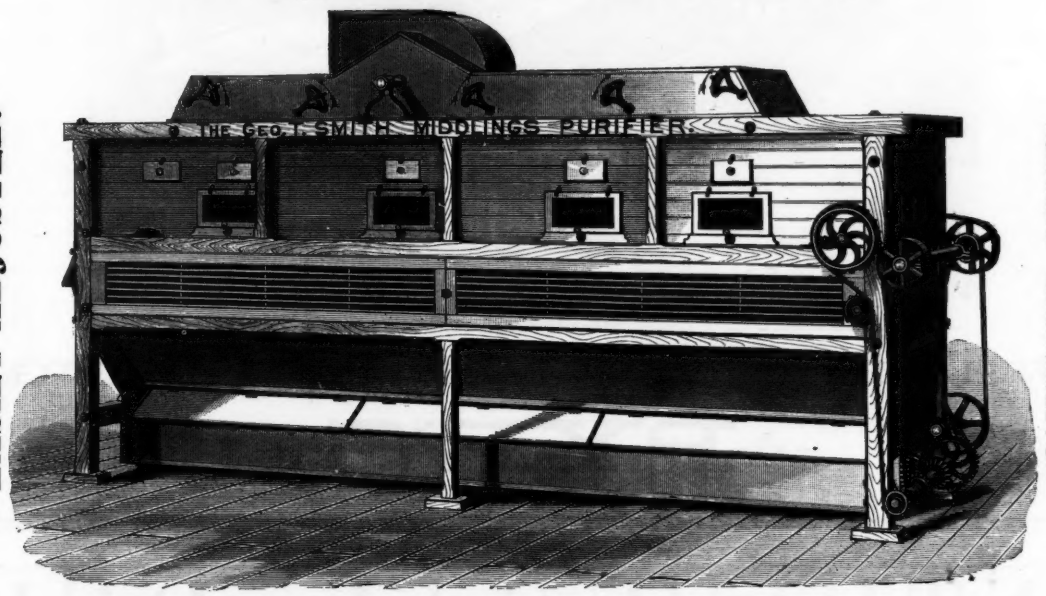

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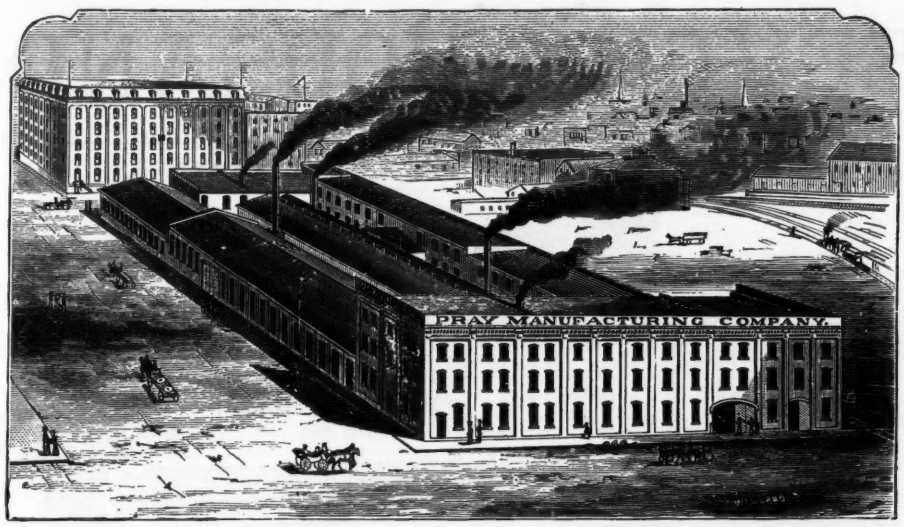

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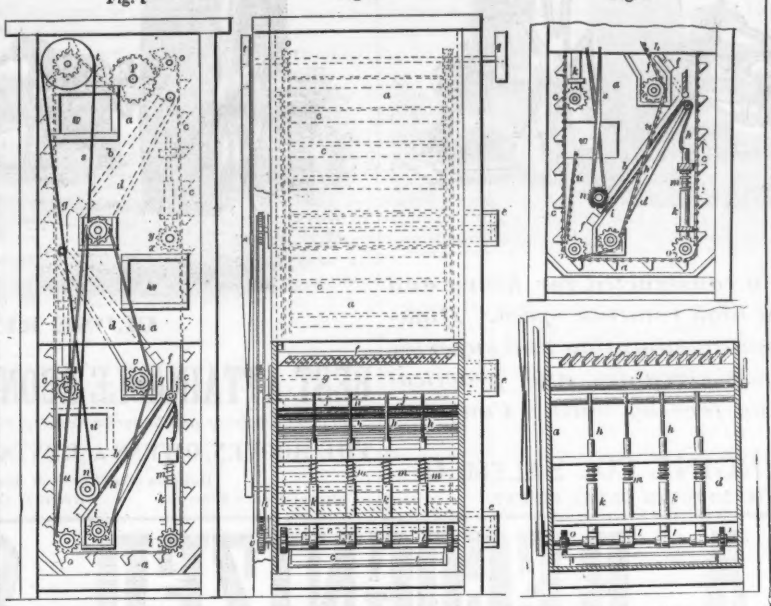
MILLING PATENTS.

MACHINE FOR SEPARATING GRAIN, MEAL, ETC.—To John Damp, Ashland, O.; No. 282,707; dated Aug. 7, 1883. Fig. 1 is a side elevation of the machine with the lower part of the casing removed. Fig. 2 is an end elevation with the casing removed. Fig. 3 is a side elevation of the lower part of the machine with the side boards of the casing removed. Fig. 4 is an end elevation, with the end board of the casing removed. Claims: 1. The combination, with an inclosing casing or chest, of an endless belt or chain elevator, adapted to elevate the material from the bottom of the chest to the upper part thereof, and an inclined sieve arranged between the ascending and descending sides of the elevator, and adapted to receive the elevated material from the elevator and to discharge the coarse material upon the bottom of the chest. 2. The combination, with the inclosing case or chest, of an endless belt or chain elevator, an inclined sieve arranged between the ascending and descending sides of the elevator, and mechanism whereby the buckets of the elevator are inverted over the head portion of the inclined sieve. 3. The combination, with the inclosing chest or casing, of an endless belt or chain elevator *c*, running over pulleys or wheels *o*, an inclined sieve arranged between the ascending and descending sides of the elevator, and depressing wheels *p*, whereby the elevator is caused to travel in a downward direction over the head portion of the sieve. 4. The combination, with the inclosing chest or casing, of an endless belt or chain elevator, an inclined sieve arranged between the ascending and descending sides of the elevator, and a rotary brush whereby the material is disintegrated. 5. The combination, with an inclosing chest, of an endless belt or chain elevator, two sieves, arranged one above the other, between the ascending and descending sides of the elevator and inclined in opposite directions, and a pivoted adjustable gate *g*, whereby the material escaping from the upper sieve can be directed upon the lower sieve or directly into the casing at will. 6. The combination, with an inclined sieve *b*, of a sliding bar *k*, revolving actuating cam *l*, spring *m*, guide roller *j*, and whip cord *h*, attached with its ends respectively to the sliding bar and the sieve frame.

ROLLER FEED MECHANISM.—To W. O. Gunckel, Terre Haute, Ind., No. 282,720; dated Aug. 7, 1883. This device is shown in the first of the accompanying cuts. Claims: 1. In a roller feeding mechanism, the combination, with the hopper, of a laterally-movable roller, and means, subject to the weight of the material in the hopper, for varying the position of the roller, and thereby varying the feed. 2. In a roller feed mechanism, the combination, with the hopper and a movable roller, of a hinged board, H^2, forming a movable portion of the hopper, and arranged to bear on the roller under the gravity of the material in the hopper, and a spring or springs arranged to oppose the pressure of the said board. 3. In a roller feed mechanism, the combination, with the hopper and hinged part H^2 thereof, of a movable roller, sliding bearing boxes for said roller, springs arranged to bear upon said boxes in opposition to the boards H^2, and means for adjusting the force of said springs. 4. The combination, in a roller feeding mechanism, of a hopper, a stationary and a movable roller, means for rotating said rollers so that their adjacent faces travel upwardly and outwardly, means, acting by gravity of the grain in the hopper, for automatically forcing the movable roller outward, and means for yieldingly opposing this outward movement of said roller. 5. The combination, in a roller feeding mechanism, of the stationary roller A, the movable roller A′, the hinged plate H^2 of the hopper, whereby the weight of the superposed grain may tend to force the movable roll outward, and adjustable spring devices arranged to bear the movable roll inwardly. 6. In combination with the hopper and its movable part H^2, the stationary roller A, arranged in proximity to a stationary part of the hopper, an opposing movable roller, A′, journal boxes C′ for said movable roller, guideways B, supporting the boxes C′, stationary posts B′, screws D, threaded through said posts, springs *d*, interposed between the screws D and the boxes C′, and bars *d* within said springs.

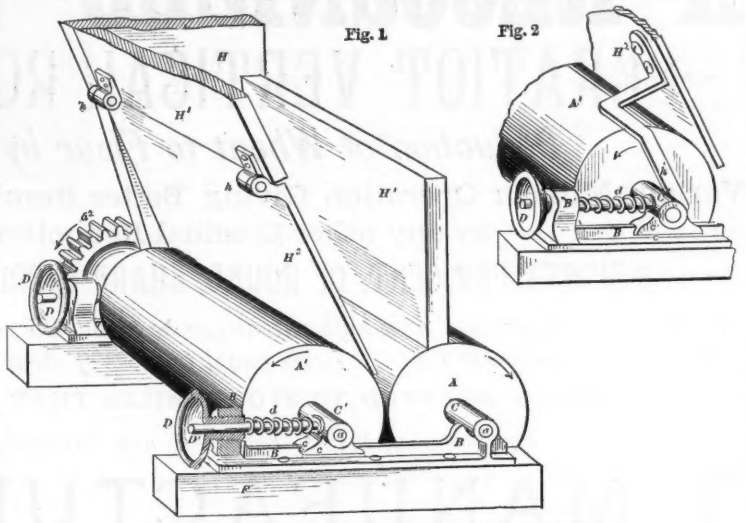
SEPARATOR.—To W. O. Gunckel, Terre Haute, Ind.; No. 282,719; dated Aug. 7, 1883. This invention is illustrated by the middle group of cuts. Claims: 1. In a separator, the combination of a series of rollers arranged side by side, mechanism constructed to oscillate said rollers in the same direction, and mechanism for adjusting the spaces between the rollers, whereby all the said spaces will be equal and may be equally varied. 2. In a separator, the combination of a box or chest, B, horizontal supports D at opposite ends thereof, a series of inclined rollers, journal boxes for said rollers, movably sustained by the supports D, differential screws applied to the journal boxes, and means for actuating the rollers. 3. In the sparator described, the combination, with the separate journal boxes for the rollers, of a differential screw constructed in two parts, oppositely graduated as to the pitch of the screws from the junction of the parts outwardly. 4. In an adjustable roller separator, the combination, with the roller journal boxes, of a differential screw graduated as to the pitch of the screw threads, as described, means for holding the screw longitudinally stationary, and means for retaining one journal box in a fixed position on said screw.

Fig. 1 Fig. 2 Fig. 3



PATENT NO. 282,707; MACHINE FOR SEPARATING GRAIN, MEAL, ETC.

Fig. 1 Fig. 2



PATENT NO. 282,720; ROLLER FEED MECHANISM.

Fig. 1 Fig. 3

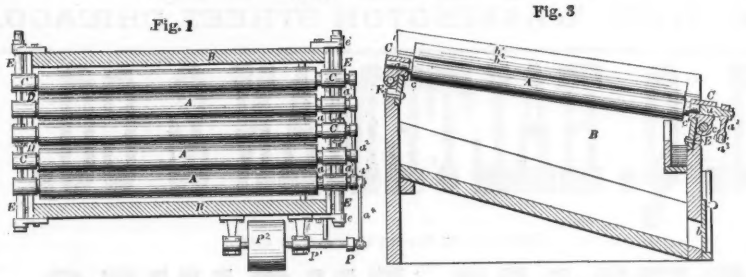
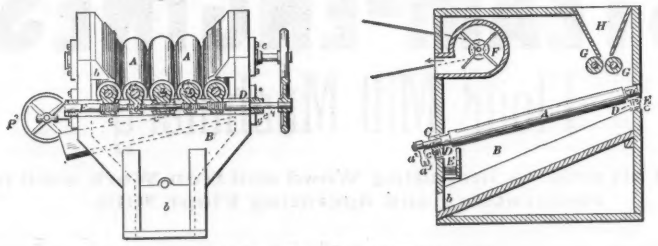


Fig. 2 Fig. 4



PATENT NO. 282,719; SEPARATOR.

The Genial Snouffer Speaks.

Bain's backer, the veteran "voice from Cedar Rapids," Col. J. J. Snouffer, who is president of the Millers' Mutual of Iowa, and the state association also, ventured unwarily and amiably into the NORTHWESTERN MILLER office after business hours a few days ago, thereby offering himself up as a sacrifice to the interviewer's pump which turned him inside out, something like this:

"Been away out west. Out in Dakota and round there aways. Good country? Yes—some of it! but Lord, you couldn't make it an inducement for me to live there. Now, there's Fargo—Fargo's a rattling good town—electric lights, good houses, stores, everything you want—and west of Fargo a bit—is the finest country you ever *did* see. Moorhead's a good town too; room for 8,000 or 10,000 people in Moorhead. Jimtown's a pretty lively place. All good towns. They calculate to live on the big wheat country round them, I suppose; everything's booming right along. But I say what are they going to do when the wheat gives out? Why, I remember twenty-five years back when Iowa was the boss wheat country; right around Cedar Rapids we raised magnificent good wheat; made a special grade of it in Chicago. Got a fancy price for it. By and by the wheat crop failed—then she failed again—and Lord! since then the wheat down there don't amount to a cuss—all dropped to nothing. But we've got corn and we've got grass, and we can raise the finest kind of stock; so our farmers are a heap sight better off than when we raised wheat; and there's southern Minnesota, what a country that was for wheat. Why, I remember loading a car with ties, running her out into that country just as the road was being built; we unloaded the ties, right at the end of the line and loaded her up with wheat, because it was the very finest kind of wheat. Now where's your southern Minnesota wheat? But that Dakota country's no good when the wheat quits, and you don't have to look so very far ahead to see the day when it will quit, either. The ground ain't any good for grass—and you can't raise corn there to save you.

"Might the climate change when the country's settled up? Well I don't know, I hope so! I've been going round there in August, and my overcoat was none too warm. Have'nt heard from Cedar Rapids for three weeks. Been down among the Sioux Indians—don't know just why I went down to see 'em, but I did. Spent one Sunday among a couple of thousand of them. They didn't understand me nor I them, but I tell you, they're no fools, not by a long shot. They scratch the ground a little and raise a little truck, but the Sioux Indian's farming don't amount to much.

"Yes, I opposed Christian for president of the National Association at that meeting in Chicago (and by the way that was an almighty slow meeting any how). Christian's a friend of mine and I like him—but he ain't the man for that place. He's too much of a gentleman. You want a man who will charge around and raise a discussion; nothing going on, start something; stir 'em up I say—why, when I go to our state meetings, there is no interest shown at first. They don't talk because there's nothing special to say. Well, I just light in and *make* something to talk about. Politics'll do if you can't hit anything else, but keep 'em stirred up, any way.

"Our company has paid two losses recently. Sloss & Son, Traer, Ia., burned latter part of July; loss in milling stock, $17,000; insured in the Millers' Mutual for $5,000. It was adjusted and paid before I left. The lightning struck the Gilbertsville mill, Gilbertsville, Ia.; loss $7,000. Insured for $3,500, which was also adjusted and paid before I left. I told the Chicago *Investigator*, in reply to some of their remarks, that we could insure at our present rates, lose twelve average losses, in a year, and still be 37 per cent better off than stock insurance companies. We have only lost five mills so far; got seven to go yet. Well, I'm off for home. Family's gone by way of Chicago. So long. Remember me to Palmer."

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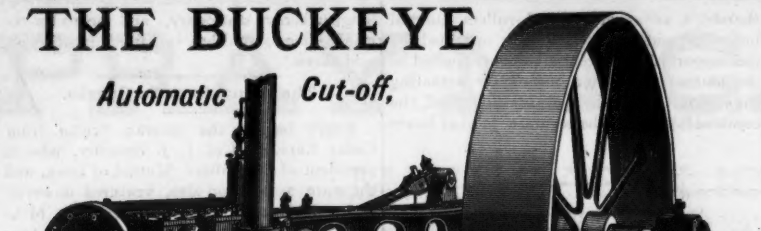

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EIGHTY PER CENT. OF ROUND, SHARP MIDDLINGS GUARANTEED,

Out of which 70 per cent. of a high patent can be made, 25 per cent. of a good clear, and only 5 per cent. of low grade flours. Yields equal to those of stone mills. Great saving of power.

SPECIALLY ADAPTED TO STONE MILLS THAT ARE CHANGING OVER.

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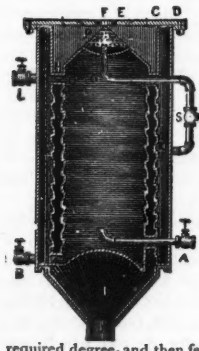
C. T. HANNA'S

WHEAT HEATER

—AND—

Wheat Heater and Steamer.



Patented Sept. 27, 1870. Re-issued Aug. 31, 1880. Re-issued May 17, 1881. Patented Feb. 28, 1882.

Millers please examine the 1st and 9th claims and then ask yourselves or attorneys if all other machines used for the *same purpose are not direct infringements.*

FIRST CLAIM.—The Improved Milling *Process or processes of preparing grain for grinding and feeding* it to a grinding mill, which consists in passing it by its own gravity *over or in contact with a heated surface,* thus drying and heating it to the required degree, and then feeding it to the *burrs or rolls while still hot,* substantially as and for the purpose hereinbefore set forth

NINTH CLAIM.—An apparatus for use as specified, grhich when suspended vertically is adapted to receive wain, and allow passage and discharge of same by its own gravity, and is provided with a chamber or chambers for receiving steam for the purpose of heating the grain as it passes in contact with the heated walls, as set forth. Address

C. T. HANNA,

General Mill Furnisher, Contractor & Builder,

39 Water Street PITTSBURGH, PA.

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Manufacturers of

STEAM-ENGINES

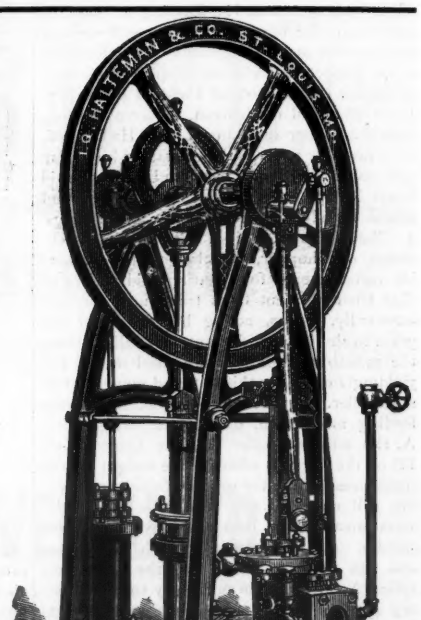
Flour Mill Machinery

And all articles, including Wood and Iron Work used in constructing and operating Flour Mills.

We can adapt the Roller system to small Mills as well as large, and can furnish approximate or close estimates to millers wishing to build new mills or remodel old ones, having experienced millers for that purpose.

SEND FOR ILLUSTRATED CATALOGUE, PRICE AND PATTERN LIST.

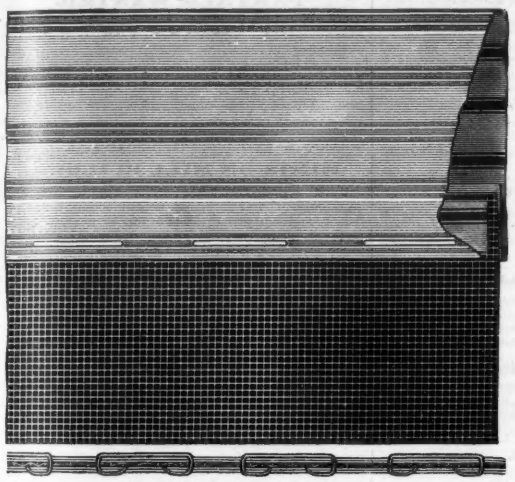
Office at Works, 1611 to 1613 S. Third St., ST. LOUIS.



Patent Metallic Fastening For Binding Wire Cloth.

The accompanying cuts show in plan and section a new method of attaching the ticking or duck to wire cloth, now so extensively used by millers, by means of wire staples. This method of fastening loose papers, binding pamphlets, etc., is doubtless familiar to our readers, but its use for the purpose indicated is a novelty and one which promises to become popular. The owners of the patent, Edw. P. Allis & Co., of Milwaukee, say of it:

"Since the general adoption of the roller or gradual reduction system of milling, millers have felt the need of some simple, cheap, and durable means of attaching the wire cloth covering to the break or scalping reels. If simply tacked on the ribs, the constant bending or vibration of the wires soon causes the cloth to break at the edge of the rib or at the heads of the tacks; if made up in the ordinary manner with silk or linen thread the wire soon cuts the thread; in either case causing the reels to leak and seriously interfering with their efficiency,



while the cost of repairs is a serious item. The simple device illustrated by the accompanying cuts, furnishes a complete solution of the difficulties heretofore encountered. The wire cloth is bound either with ticking or heavy cotton duck, held in place by wire staples. The binding is more durable than binding fastened with linen or silk stitches, as the wire stitches will not cut when they pass through the wire cloth, neither chafe nor wear off from constant contact with rough stock. Wire cloth bound in this manner will last longer, is easier put on the reels, and will do better and more even work, because it can be stretched thoroughly, making the meshes square and even. The binding being flexible prevents the wire from breaking from continued vibration. This binding has the merit of cheapness and durability. It costs no more than the ordinary binding, and will last as long as the wire itself."

Death of a Wisconsin Miller.

We take the accompanying notice of the death of S. Lightcap, a mill-owner of Hazel Green, Wis., which we briefly mentioned at the time of occurrence, from the Galena *Gazette:*

"S. Lightcap, owner of the well known Lightcap flouring mill in Hazel Green township, died Sunday evening, July 22, at his home near that village, aged 70 years. The deceased was born in Pennsylvania in 1813, and emigrated to Grant county, Wis. in 1847, settling in Hazel Green township, where he erected a flouring mill which he operated from that time on until his death. The establishment is one of the largest and best equipped in Southern Wisconsin, and the Lightcap brand of flour has always ranked as standard throughout the State. Mr. Lightcap was one of the most prominent citizens of his township, and his death has entailed a great loss upon the community in which he lived. He was an honorable and upright gentleman, and commanded the profound respect of all who knew him. He leaves a wife and several grown children. He was well known and greatly esteemed in Galena, and the announcement of his death will be received with deep regret by his friends."

The Centrifugal Reel.

The following letters to the *Millers' Gazette*, London, were called out by the articles of "Anglo-American," published in the NORTHWESTERN MILLER; therefore we republish them here in order that our readers may be fully informed as to the progress of ideas on this important subject:

"I suppose we ought all to feel very thankful that we have such a champion on this side of the water as our redoubtable George Miller, who, to combat our friend 'Anglo-American,' has favored you with the long and interesting letter which appeared in your last issue. But has not our scientific miller rather overstepped the mark in his scientific discourse? He says, to convert the vane chamber into a vacuum would be a great mistake. Now, does he or anyone else suppose that this is possible in such a machine? Is there really less pressure of air inside than outside the machine? Certainly not. The reason why more wind is not set in motion in the machine is because the vanes or beaters are so very narrow. Widen the beaters, and see then if there is anything approaching even an imperfect vacuum. In these machines there is not only nothing to exhaust the air, but even if it could be done it must be continuous, and doubtless Mr. Miller could calculate how much less than a perfect vacuum would cause such a machine to collapse. If anyone thinks thereis less air within than without, I ask them justto look at the canvas in the shutter. It will be found blown outwards, not inwards. This plainly shows there is compressed air within. I know little of science, but this I do know, that all bodies in vacuum are equal, so that if a vacuum could be obtained, the light particles would be thrown against the silk, with equal force to the heavier ones, and consequently pass the silk, and we should produce an effect contrary to that desired. Where they have to over come the resistance of the air this cannot happen.

"The question of the admission of air does not seem to be properly understood. It may be made, as Mr. Miller says, 'a cheap and effective auxiliary with proper handling,' but as yet I have not seen it done as I should desire.

"All must have noticed that in machines of the centrifugal class, as in wire machines for instance, there is a lot of wind created or set in motion; this really becomes compressed air, unless it can escape, and no doubt materially hinders the work of the machine. To allow the air to escape by a ventilator often causes waste, and if there be no ventilator the wind finds its way out at the tail, often carrying away what ought to go in the flour. Now, I have thought that if a current or circuit of air could be set up, the silk or wire would be materially assisted thereby. Thus I would lightly exhaust the air with a small fan on the top from the inside of the case, say near the head, and return the same air, mixed with fresh if you please, into the reel or cylinder at the tail end. The air must thus not only be set in motion, but also pass the silk or wire, materially assisting and increasing its capacity.

"Similarly I have thought that a current could be set up from the stones to the stones; that is, the warm air taken from the stones could be made by the same, or another fan, to return to the stones again; that would avoid the introduction of cold air, and, if practicable would solve the difficulty of dust catchers and stive-rooms, as well as explosions. I beg to say that I merely suggest this; I have not tried it, neither have I thought of it seriously. I have not the means of making experiments, so perhaps Mr. Miller will kindly inform me if either suggestion is practicable.

"With regard to the centrifugal as a machine, I think it far ahead of the old reel for perfect separation and quality, as well as capacity; and I have no doubt this is the machine with which (with rollers) the milling revolution begun in England, and will be successfully carried through.

"I believe most of the makers of the best known machines now provide for the adjustment of the beaters from the outside, but not so simply as our friend Mr. Miller, whose machine I should like to see.

"With regard to the tail delivery spout: If the worm at the head will convey the undressed product in, and we can see that it does it, I think we may safely trust that at the tail, having the same size and pitch, to remove the residue after dressing. There is a convenience in the present arrangement of worms with the machine as at present constructed; the only objection I see to them, is that they consume power, quite as much as that required to turn the reel. Makers are too fond of copying certain points in construction, often without considering the necessity, and certainly at a loss to their own originality.

"W. T. BATES."

***

"After a thorough investigation of the letters published in your Nos. of June 11, and July 9, signed 'Anglo-American,' I agree with him on the following points: The centrifugal should be fed by a conveyor. The cylinder should be a combination of lightness and strength, it is imperative, also, to have the circles not less than six inches apart, or the cloth will remain hollow and baggy, no matter how tightly put on; also, that the centrifugal reel is not adapted for scalping heavy material. If 'Anglo-American' had confined his letters to a certain centrifugal, and had given the name of one or more that he had used, I should not have deemed them worthy of a reply; but as he has taken in all centrifugals, embracing the Hunter with the others, I must here say, his *'lights'* given to the milling world are blinding and untrue, when viewed from the stand-point of the work accomplished by the Hunter centrifugal. The *construction* of machines is not so material to millers, so long as they are put up in a good workmanlike manner. It is their *uses* which affect every miller. The principal involved in a centrifugal is very important. The Hunter centrifugal, having a stationary cylinder, compared with a centrifugal having a revolving cylinder, differs as much as night from day. The last named produces nothing but a soft greasy flour; the first named strong, granular flour. Why should there be so much difference in the two flours? Because, with a revolving cylinder, in order to produce color, the cloth must be very fine, say No. 16. If No. 14 is used the flour will be dark and specky. A large quantity of air enters with the meal and the beaters act like fan blades, drawing the air from the centre and forcing it against the silk, carrying with it the fine fluffy matter. As the air escapes through the silk, the fluff, if it does not pass through, is deposited against it, and afterwards, the heavy material when thrown against the fluff forces it through by the centrifugal action of the meal. The meal as it revolves over the bottom of the cylinder brings the specks in contact with the silk, and they are forced through by the pressure of the beaters as these lift the material from off the bottom. The air, if it has no outlet and remains in the machine, must condense and soften the flour. The Hunter centrifugal with a stationary cylinder is usually clothed with No. 14 on the lifting side, and No. 10 on the down side. The bottom of the cylinder is covered with heavy canvas, which prevents the specks from being impelled through by the pressure of the beaters. The cylinder is provided with an opening on the top for the air to escape, without being forced through the silk. The bolting is principally done on the top of the cylinder, consequently the fluff is *not* thrown against the silk, which accounts for the purity of the flour, and hence the reason why such coarse cloth can be used on the cylinder frames. The silk is fastened on the inner side of the circles, which are set six inches apart, thus relieving any strain. The machine is provided with a detacher, that breaks up the flakes and releases a quantity of the moisture which escapes with the air and does not injure the flour. The detacher breaks up the fractured particles of middlings converting about 50 per cent of second middlings into a beautiful granular flour. Perhaps 'Anglo-American' will take the above statement *cum grano salis*, yet I am prepared to back them all in any way desired, giving ten to one to perform all I claim. Discoveries are made sometimes by accident, and at other times from actual study and experimenting. I do not confine myself to any class of machinery. In getting up the Hunter centrifugal, I was governed by the defects in the products of the ordinary centrifugal reel, viz., soft white flour, and observed, also, its numerous mechanical defects—such as immense wear on the silk, the enormous power consumed by the use of a 'machine that had every detail carefully arranged' in which is used as much massive iron in the cylinder as possible, and that there was no escape for the accumulation of heated air, which condensed and assisted in softening the flour. All these defects have been thoroughly overcome by Hunter's greatest discovery yet made in milling, namely, 'only a cylinder, a set of four beaters and a frame,' which 'Anglo-American' terms 'a 'one horse reel.' Why should all these wonderful results be obtained with such a simple piece of machinery? Because constructed on purely scientific principles. The meal is fed into a disintegrator and conveyed into the chute, which is provided with a drop valve at the inner end to exclude the air, and then thrown up against the silk. Nothing but the heavy part reaches the silk. It must be remembered that every particle of the wheat, no matter how fine it is pulverized, bears a regular specific gravity, consequently the fluff is *not* thrown against the silk, nor is there any current to carry it there and urge it through with the flour. The air that enters with the meal is forced through the opening in the top and escapes without condensing or softening the flour. The question may be asked, what becomes of the fluff? It drops into the centre of the cylinder and is held there by the current formed by the rapidly revolving beaters, which form a circuitous current around their own circuit of revolution, of greater force than the specific gravity of the fluff. What carries the fluff to the tail end? The drift of the beaters on their spirality carry it to the tail end, as has been demonstrated from the fact that when first filling the machine up with meal, before the meal reaches half way down through the cylinder, the fluff discharges at the tail end. In the Hunter centrifugal, the fluff never reaches the silk in consequence of which is the practicability of using coarser cloth than on any other centrifugal, with the result of producing the whitest and most granular flour, superior to any that has ever been yet produced by any reel or other centrifugal. Anglo-American illustrates his opinion in describing the uses to which they can be applied. No doubt his personal experience with the revolving cylinder controlled these opinions. He says 'As to disintegrators, if the meal to be bolted has been properly milled in its previous process, it should never need it.' There is not a mill in America but what needs a centrifugal. If 'Anglo-American' can enlighten millers how to 'mill properly,' he had better come to the United States, and make his fortune, for the millers here would like to see the man, and would pay well to be taught by him, how to run their mills in America in the best possible manner

"ANDREW HUNTER.

"Chicago, Ill., U. S. A."

The accompanying rules for the government of the inspection of barley have been adopted by the Illinois railroad and warehouse commissioners, and will go into effect Sept. 1: No. 1 barley shall be plump, bright, clean and free from other grain. No. 2 shall be sound, of healthy color, not plump enough for No. 1, but reasonably clean and reasonably free from other grain. No. 3 shall include slightly shrunken and otherwise slightly damaged barley not good enough for No. 2. No. 4 shall include all barley fit for malting purposes not good enough for No. 3. No. 5 shall include all barley which is badly damaged or for any cause unfit for malting purposes, except that barley which has been chemically treated shall not be graded at all. The grades of Nos. 1, 2 and 3 Scotch barley shall correspond in all respects with the grades of Nos. 1, 2 and 3 barley, except that they shall be of the Scotch variety.

Fred W. Maullin, broker in grain options at New York and a member of the produce exchange, failed last week with small liabilities.

[Continued from page 176.]

being allowed to drift into dangerous excesses, speculation foresees these tendencies and applies an immediate check, and in this very important sense the much anathematized speculators become the regulators of trade, so that instead of creating panics, speculation arrests unsound tendencies before they have reached any really dangerous magnitude, and thus, instead of decennial panics, we are more apt to have a series of minor adjustments. It is an unfortunate thing in such a state of affairs, unsettled as things are, that the employed should have no better discretion than to add, at this time, to the embarrassments of employers by demanding increased wages, which is really given to him in another way by the fall in prices. If the employers are forced to stop work from this state of things, the employed will find out their mistake when it is too late.

A Great Day at Jackson.

Wednesday the 15th, inst. was a gala day at Jackson, Mich., and will long be remembered by the employes of the George T. Smith Middlings Purifier Co., together with their relatives, male and female, married and single. That date having been selected by President Smith as the day for a grand excursion to Detroit and the regions beyond; at 6 o'clock a. m., the workmen and the members of their families formed in line in front of the company's works to the number of over 1,000, with banners, flags, and appropriate mottoes. Headed by a band, the procession moved toward the Michigan Central depot in the following order: Officers and stockholders of the company in carriages; large double purifier properly draped and decorated and drawn by four thoroughbred Normans; female employes in carriages; four hundred male employes with their wives and children. Arrived at the depot the party embarked on a special train of sixteen coaches and were carried to Detroit where they took the steamer to Grosse Isle, where dinner was served and partaken of. After dinner the steamer carried the pleasure seekers up the river and into the lake from whence they returned to Belle Isle where a stop was made, after which they returned to Detroit, and thence home, arriving at 10 o'c'k p. m., happy, sleepy and contented. The employes were so much pleased with Mr. Smith's arrangements for their pleasure that they engaged a band Thursday evening and called on him at his residence *en masse*. After the serenade they called out Mr. Smith and speech making, refreshments, etc., added another chapter to the story of midsummer festivities. On the whole, as a local paper observes, "It was the biggest thing old Jackson ever saw," and Mr. Smith demonstrated his ability as a manager of excursion parties beyond cavil.

The Baker Breaks.

Four sets of the Sergeant Mill Buhr Driver Co.'s gradual reduction disks have been placed in the Anchor mill of C. A. Pillsbury & Co., and they are now running on the first break, making about 1,000 barrels per day. Head Miller Helfrich, whose judgment is considered as good as that of any miller in the country, says that he is very much pleased with their work and that he is convinced that they have made a decided improvement in the quality of his flour. The disks act to a marked degree as cleaners, releasing a large quantity of blue crease dirt which could not be detached by means of corrugated rolls. Though a number of smaller mills have been fitted up with these machines, this is the only opportunity we have had to see them in operation in a strictly first-class mill, and we must say that we are decidedly pleased with their work. Mr. Helfrich is perfectly willing to show other millers just what the machines are doing, and the manufacturers invite all who are interested in improvements to examine them while at work. The office of the Sergeant Mill Buhr Driver Co. is at 321 Hennepin ave., Minneapolis.

Grain shipments from New Orleans to foreign ports for July, 1883, consisted of 614,925 bus. corn and 8,000 bus. wheat. In July, 1882, there was no corn, but of wheat 249,920 bus. were shipped. As compared with July, 1881, the exports show a decrease of 317,702 bus. corn and 424,270 bus. wheat.

MILLING NEWS.

Chas. Embler, saw and grist mill, Walden, N. Y., has been burnt out.

C. Carpenter, operating a mill at Nanimo, B. C., is reported to have left town.

Adam Scott, operating an elevator at Indianapolis, Ind., has given a realty mortgage for $47,940.

M. L. Turner's elevator at Marshfield, Mo., has been partially destroyed by fire; partly insured.

A judgment of $2,500 has been found against Leedom Ridgway who operates a grist mill at Manoa, Pa.

Johnson's new oatmeal mill at Portage La Prairie, Manitoba, will be ready for operation in about six weeks.

O. Tenney, of St Cloud, Minn., writes us that the wheat and oats in that vicinity will be of an average crop.

The firm of Hall & Snyder, owners of the grist mill at Susanville, Cal., has dissolved. H. Snyder succeeds.

Meyerhoff & Bicking, millers of Hawthorne, Ill., have been burned out. Loss $8,000; insurance $4,500.

Fisher & Son, flour and plaster mill, Huntingdon, Pa., have dissolved, H. C. Fisher continuing the business.

Jas. Monroe, aged 54 years, and an employe, was smothered in an elevator bin at Morris, Ill., one day last week.

Castel & Leyser, grain commission merchants of Meridan, Miss., have dissolved. F. S. Castel continues the business.

The grain and warehouse firm of La Rue & Boag, at Lockford, Cal., has dissolved, the former retiring and J. Boag continuing the business.

It has not been settled who will succeed to the ownership of the mill at Hazel Green, Wis., belonging to the estate of S. Lightcap, deceased.

At last there is a fair prospect for Duluth's getting a flour mill, it being expected that work will be commenced on the building inside of a month.

The Crescent mill at Augusta, Ga., owned by J. F. and J. L. Miller, was destroyed by fire Aug. 16. Loss about $50,000; insurance $27,000. A considerable amount of flour was consumed.

Eckert & Swan are preparing to erect a mill of considerable size at the corner of Canal and Fulton streets in Chicago. Mr. Eckert formerly handled the flour of the Kern mill of Milwaukee, Wis.

The grain warehouse of Wm. Shaffer, at Flora, Ill., was burned on the 15th inst., the impression being that it was set on fire. The house contained 1,000 bus. of grain, and the loss is $4,000, with no insurance.

John M. Cole, the miller of Rochester, Minn., is reported to have been among a number killed by a train being blown from the track by a cyclone Tuesday evening at a point between Rochester and Zumbrota.

Frank Fillmore, aged 20 years, was killed a few days ago at Long Lake, Mich., while repairing the flume of the Ransom mill, the sides caving in and crushing his head and shoulders. His brother was with him, but escaped with slight injuries.

S. L. Bean has purchased Wm. Tennant's interest in the milling firm of Bean & Tennant, of the "Polar Star Mills," Faribault, Minn., the firm name becoming F. A. & S. L. Bean. Mr. Tennant will continue as heretofore in the charge of the milling department.

The appended table shows the exports from this country and Canada for the period from Sept. 1 to Aug. 17:

To—	Flour, bbls.	Wheat, bus.	Corn, bus.
Great Britain and Ireland	5,858,339	57,681,275	35,934,028
Continent	367,350	28,655,829	8,161,214
S. America, W. I. and other countries	2,302,910	777,536	1,314,346
Totals	8,528,599	87,214,640	45,409,588
Corresponding time 1881–82	5,379,475	90,482,310	25,725,359

The Brainerd (Minn.) Flouring Mill Co. have filed articles of incorporation with the Minnesota secretary of state, with $60,000 capital stock. The incorporators are: M. K. Swartz, Grundy Centre, Ia.; J. H. Koop, J. N. Nevers, J. A. Gardner, Lyman White, and Chauncey B. Sleeper, of Brainerd.

The following amended grain inspection rules have been promulgated by the Milwaukee board of trade: No 3 spring shall include wheat reasonably sound, sufficiently clear for No. 2, and weighing not less then fifty-four pounds to the measured bushel. No. 2 corn shall be dry, sound, reasonably clean, but not plump enough for No. 1. Scotch barley shall be graded as such according to the requirements applied to Nos. 1, 2, and extra No. 3 barley of other varieties. The grain inspector is instructed to interpret the instruction rule for extra No. 3 barley more rigidly so as to exclude from that grade the poorer class of barley which has heretofore been permitted to pass into No. 3.

SPECIAL NOTICES.

WANTED.

One second hand 60 inch American water wheel. Address, etc., CASCADE MFG. CO., Cascade, Minn.

FOR SALE.

A steam grist mill with two run of stones. Situated at Lenz, five miles north of Wayzata. For particulars, inquire of P. M., at Lenz, Hennepin county, Minn.

WANTED.

A good miller to take an interest in the best located custom water mill in the state. For further information address C. ANDERSON, Austin, Minn., or NORTHWESTERN MILLER, Minneapolis.

WANTED TO RENT,

With privilege of buying, a water power custom mill of 25 to 50 barrels capacity; in Minnesota or Wisconsin preferred. Address, for particulars, "CUSTOM MILLER," River Falls, Wis.

SITUATION WANTED

As head miller by a temperate, married man who is perfectly at home with either the roller or new process systems. Good references furnished. Address "GRADUAL REDUCTION," River Falls, Wis.

FOR SALE

At half price of new, two of Jonathan Mills' degerminators; run only about 5 months, all perfect in every respect. Reason for selling, prefer rolls in place of them. UNION MILL CO., Waterloo, Ia.

WANTED.

A partner to take an interest in a good custom and merchant mill, or will sell the whole on easy terms. For particulars, inquire of O. HEVEL, Columbia mill, Minneapolis, Minn.

WANTED.

By a first-class miller a situation as head miller, had charge of a large roller mill for several years, and had charge of other mills in different parts of the country; would like to take charge of a good mill from 400 to 1,000 bbls. capacity. For further information, address "ROLLER MILLER," care of NORTHWESTERN MILLER.

FOR SALE.

Five run of four foot buhrs, and one extra runner, extra selected stock, dressed and in good running order with spindles, lighter, screws etc.; one 30½ inch Leffel turbine in perfect order; pair of smooth rolls.
Address VICTOR, (this office.)
Will E. D. Munger please send address.

WANTED.

Young man two and one-half years as correspondent and amanuensis with one of the largest milling companies in this country, is open for engagement in a like capacity. Can give best references. Fully conversant with the export trade, and general routine office work. Address A. B., this office.

ENGINE FOR SALE.

A 10x30 Reynolds-Corliss engine, built by E. P. Allis & Co., steam pump, 40 H. P. flue boiler with boiler front, grates, etc., all complete. Has been been used but a short time, and everything is in first class order. Will sell cheap for cash. HASHOW, MAISH & DAVIS, Variety Iron Works, Minneapolis, Minn.

FOR SALE.

Undivided half of a good custom flouring mill in a lively town in northern Iowa, on Shell Rock river, 3 runs 4-foot buhrs, building two and a half stories high with basement, good water power. Every thing solid and in good running order. Price $5,000, one-third cash. THOMAS & SON, 219 Wash. ave. south, Minneapolis, Minn.

SITUATION WANTED.

Competent machine shop foreman and draughtsman of seven years' experience in railroad and general manufacturing and repair shops, wants situation as superintendent or foreman in good shop. References to former situations and testimonials as to ability, etc., furnished. Address, SUPERINTENDENT, care NORTHWESTERN MILLER.

BAG HOLDERS.

Millers wanted in all parts of the country to act as agents for the sale of the ASHLAND PATENT SACK HOLDER. The most simple, effective and best device ever invented; no nuts or screws to get out of order. Always ready and adjustable. Handy in the mill, on the farm, or wherever bags are used. Will send sample prepaid on receipt of $1.50. Address, L. JEFF SPRENGLE, Ashland, Ohio.

FOR SALE.

Complete set of flour-barrel stock machinery, consisting of stave cutter, equalizing saws, heading planer, turner and joiner, heading and cross-cut saws; also tight barrel saw for sawing pork barrels and tierce staves, including all necessary pulleys, shafting, etc. Also slide-valve engine (100 horse power,) cylinder 20x30; boiler 4½x16 feet, and attachments all in good running order and condition. For price and terms address CHRIS. MAY, Watertown, Wis.

MILLER WANTED.

Good miller wanted for 3 run custom mill in Wisconsin. Will rent on shares or for fixed price. Good trade and mill recently remodeled. Call on or address, "CUSTOM MILLER," NORTHWESTERN MILLER office.

FOR SALE.

A good extra water power mill fed by lake water the year through. Has 4 runs of 4-foot buhrs; will carry 7. Has 12-foot head, and is located in a pleasant town; good schools and churches; one railroad. This is a good safe investment. Poor health the cause for selling. Address CHARLES FRENCH, St. Cloud, Minn.

FOR SALE.

At a bargain. One 2½ story flouring mill, with two run of 4-foot buhrs and other necessary machinery, with purifier lately put in; in a good wheat growing country in northeastern Nebraska, with 40 or 160 acres of good farming land, 80 acres under cultivation, with never failing water power, will be sold at a bargain. For further particulars and reason for selling, address C. T. PAULSON, Homer, Dakota Co., Neb.

FOR SALE.

All or part interest in a gradual reduction mill of 60 barrels capacity, situated in one of the best wheat counties in northwestern Iowa. No competition. Plenty of hard wheat. Do not have to ship in a bushel. Thousands of bushels shipped away every season. Mill is running day and night on home trade. The present price of wheat, 80c. per bushel. Flour $6.00@6.80 per barrel. Only one per cent low grade made. Address H, care of NORTHWESTERN MILLER.

PARTNER WANTED.

Or will sell whole or half interest in mill situated at Mayville, D. T., terminus of St. P. M. & M. railroad in the heart of the Goose River country. No other mill within 40 miles. Large custom and exchange business; good demand for all mill can turn out. Capacity of mill 100 barrels per 24 hours. Must have at least $3000 cash. Owner of mill recently died. For further information apply in person or letter to NORTH STAR IRON WORKS, Minneapolis, N. K. HUBBARD, Fargo, D. T., or GOOSE RIVER BANK, Mayville, D. T.

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FOR SALE.

A splendid location for flouring mill or other manufacturing business at the west end of crossing of and between N. P., St. P. M. & M., and Moorhead Northern railroad tracks, with side tracks on each side, Moorhead, Minn. Buildings and a 100 H. P. Atlas-Corliss engine, etc., only one year in use, to be sold with real estate. The engine furnished since last January and is furnishing now the power to run the electric light machinery at good remunerative rates. For particulars inquire of RED RIVER MFG. CO., Moorhead, Minn.

BOOKS WANTED.

If you have any scientific, technical, reference or standard books, newspaper or magazine files, etc., suitable for a large general library which you want to dispose of for cash at a low price, send full description and price to the undersigned and you will receive a reply by return of mail. Old and rare, or modern engravings of merit are also wanted on the same terms. Address
LIBRARIAN,
Care NORTHWESTERN MILLER,
Minneapolis, Minn.

NEW MILL FOR RENT.

A new four-run steam flouring mill for rent at low figures at Conway, Ia. No other mill within ten miles. The mill is complete from top to bottom. Basement, three stories and attic; 14x20 engine; boiler 54 inches by 14 feet. Iron husk frame, belt drive, two buhrs on wheat, one on middlings and one on corn. One smooth roll on cut-off from purifier, and a corrugated roll on bran. No. 3 smut purifier with dust catcher. Six 18-foot reels with double conveyors. Plenty of cleaners and exhaust fans. Flour packer. Four sets of scales. In short, the most complete and finest finished four-run mill in Iowa. None but a good miller, with means, need apply. Address C. A. Donnell & Co., Conway, Ia.

FOR SALE.

Half interest in a Dakota water mill, 116 acres of land, 2 dwelling houses (one new this spring) and necessary out buildings. Pleasantly situated in healthy location on the Big Sioux river, 4½ miles from Jefferson depot of C. M. & St. P. railroad. Have about 15 acres of timber, good water, and some prospect of getting coal on the place. Mill contains 2 runs of good 4-foot buhrs for wheat and middlings, bolts, purifier and cleaning machinery. Building is of frame with stone basement, nearly new, with room and power for more machinery. A fine wheat harvest is now being gathered in this locality. Mill runs chiefly on custom, has good sale for products, and requires little or no capital to operate. About two-thirds of purchase money can remain on time. If desired, the whole property could be bought. No other custom mill near. Call on or address J. M. BINNS, Big Sioux Mills, Jefferson, Union Co., Dak.

NATIONAL MILLING EXCHANGE.

We are making an exclusive business of the sale and exchange of mill property, and so far as we know are the only firm in the country giving entire time to this matter. Persistent, judicious advertising and vigilance, coupled with experience, give us facilities for finding buyers unequaled by any concern in the country. We offer the largest number of good chances in all the western states and Canadas, so that buyers looking for locations should consult us. Send for latest list of steam and water power mills for sale and exchange all over the west.

J. M. MOORE, & CO.,
213 North Eighth Street, St. Louis

ST. LOUIS SIFTINGS.

[SPECIAL CORRESPONDENCE.]

We are pleased to note a very gratifying improvement in the general tone of the milling industry here during the past week, although values yet remain too low to please millers, and considerable head-shaking is indulged in. However, as wheat receipts continue to increase, and the prices are dropping some, the outlook for reasonable profits is flattering. The flour movement is very good and increasing. Southern order trade is fair in grades above family, most business being done in fancy and extra fancy. The unfavorable English crop reports and improved foreign markets have stimulated export business. Our receipts have been about the same as last week; shipments have averaged about 50,000 barrels per day, and sales 4,000 barrels. The demand for low grades has been more decided than for many weeks, and the stocks on hand have been pretty well cleared out.

The production of flour by our mills the past week may be outlined as follows:

Mill.	Bbls.	Mill.	Bbls.
Anchor	1,000	Crown Roller	600
Victoria	800	Camp Spring	800
Park	800	St. George	400
Eagle Steam	900	Union Steam	400
Sessinghaus Bros.	500	Hezel	400
Franklin	400	City Mills	200
Saxony	400	Atlantic	400
Laclede	600	United States	...
Kehlor Milling Co.	600	Cherry Street	400
Planet	1,800	Phœnix	250

Total daily output.....11,650
Output last week.....12,800

It will be seen that the production has fallen behind this week. This was caused by the shutting down of the United States mill and the placing on half time of the Atlantic and Phœnix mills. The Empire, which was expected to start up Monday, did not do so until to-day (Saturday). We think the production the coming week will be increased, as the Empire and United States mills are liable to start up with 1,100 barrels capacity, while the Atlantic and Phœnix will do so if matters continue to improve. We hope by Oct. 1 to be able to add the new Plant mill, with 1,000 barrels capacity, to the operative list, and also the Egger's mill with 500 barrels more, which will place us closely to the Minneapolis figures.

Wheat receipts for the week have been 806,000 bus., an increase of 50,000 bus. over last week. The corresponding receipts last year were 832,000 bus. Shipments have been lighter, amounting to 335,000 bus., and stocks have increased 285,000 bus. The amount withdrawn from elevators for home consumption has been 73,000 bus. Prices for wheat ranged higher from the very opening of the week until Thursday, when they broke. Nos. 2 and 3 red met with active demand—former mainly for speculative account and latter for shipment. Although stocks here are large and increasing, reports state that farmers are holding back, and we have heard of several instances where country millers have had wheat shipped to them from this city, when farmers within a few miles had plenty, but would not part with it. The market closed to-day at $1.06½ for No. 2 red, and $1.01 for No. 3. The stock on hand to-day is 1,313,552 bus.

***

Andrew Hunter, of Chicago, arrived in this city Tuesday.

P. G. Monroe, of Chicago, spent a few days in the city this week.

Henry Serth, of Lenzburg, Ill., was on the floor of the exchange Friday.

Messrs. C. W. & W. S. McCracken, of Nashville, Ill., were in the city Tuesday.

The mill of Valentine Weisemauler, at Ruma, Ill., was destroyed by fire last Tuesday night.

The Smith Middlings Purifier Co. have placed a Martin centrifugal reel in the Star mill at Hermann, Mo.

J. F. Imbs, of this city, and Thos. Koenigsmark of Columbia, Ill., returned home to-day from a trip to Minneapolis and the lakes.

The proprietors of the United States mil have added a set of Rickerson rolls to their machinery, and their work highly pleases them.

W. C. Ames, of Carlyle, Ill., accompanied by Head Miller Stewart, was in the city to-day looking around and visiting old acquaintances.

A twelve year-old son of George Sharps, of the National mill at Alton, was accidentally drowned in the river at that place yesterday morning.

The first two cars of new spring wheat were received here yesterday. It hailed from Nebraska, graded No. 2 soft, and sold for $1.00 per bus.

H. B. Eggers' new mill on Clark Ave. has reached the third story in erection, and it is the expectation to have it under roof within two weeks.

J. F. Lettrell, southwestern agent for the Smith Middlings Purifier Co., returned to the city Thursday from a trip in which the four points of the compass were crossed.

Quite a number of operative millers from surrounding sections were in the city last Sunday, attending the meeting of the National Operative Millers' Association.

The Empire Milling Co. have placed their mill in charge of R. H. McAllister, a well-known miller of large experience, assisted by William Aszmann, late of Chester, Ill., and Henry Shack, formerly with the Livingstone mill at Paducah, Ky.

MARKETS

MINNEAPOLIS, Aug. 22.

The grain markets have been moderately quiet the past week. Prices have ruled alternately weak and firm, with but limited disposition among dealers to trade. A fair export inquiry is noted in eastern markets, and the movement from there is gradually increasing. Harvesting is general in the northwest, and with the continuance of favorable weather a few weeks longer an average crop of spring wheat will be assured.

Quietness reigns in the local grain markets, and the transactions for the week are not large in the aggregate. With the inauguration of the crop movement, activity will be again installed, and the daily sessions of the chamber of commerce will be more interesting and important.

The offerings of choice wheat have been limited, with prices for both grade and sample lots well sustained. Coarse grains have been but little in demand, with fair receipts of both corn and oats. A good inquiry for millstuffs is noticed; the market for bran and shorts being stronger and prices showing an advance of 25 cents per ton.

The following were the highest and lowest prices by grade on 'change during the week ending to-day, together with to-day's closing prices.

WHEAT.	Highest.	Lowest.	Closing.
No. 1 hard	$1.16	$1.14	$1.16
" 2 "	1.12	1.10	1.12
" 1 Northern	1.10	1.09	1.10
" 2 "	1.06	1.05	1.06
" 1 Hard seller the year	1.05 to 1.06		

BRAN—$7.00@7.50 per ton in bulk.

SHORTS—$10.50@11.00; according to quality.

FLOUR—The market is firm, with a tendency to higher prices, but there is less doing. Milling wheat is in limited supply, and millers hold flour at higher prices, refusing business at old quotations. A fair amount of trading is being done at the advance, but all are moving with caution. The slowest movement is in the poorer low grades, it being claimed that their advancement in price with other grades is not warranted. The higher low grades have been very much in demand. Ocean freights are easier. The local flour quotations are: Patents, $6.50@7; straights, $5.70@6; bakers', $5@5.45; clears, $4.80@5.20; low grades, $2.25@3.20. Well known brands of patents have been frequently sold east of late, 45@50 cts. above brands equally as good, but without "a name." Prices in London are 2s 6d higher than two weeks ago.

F. W. COMMONS & CO.,
Commission Merchants
—AND—
Shippers of Grain and Mill Feed.
Choice grades of hard and soft spring wheat a specialty. Consignments and orders will receive careful attention. Correspondence solicited. 311 Hennepin Ave., Minneapolis, MINN.

G. O. FOSS. J. C. PATTERSON.
FOSS & PATTERSON,
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Plans for dams and improvement of water power.
Room 33, Boston Block,
Cor. Hennepin Ave. and Third St., MINNEAPOLIS.

J. D. EDGE,
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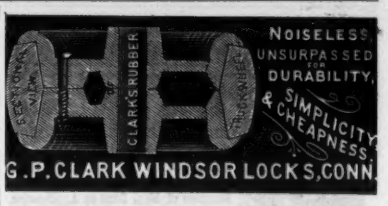
Oak Leather Belting
OF SUPERIOR QUALITY,
HARDWARE,
Mill Supplies
MILLER BROTHERS,
304 & 306 Hennepin, Ave. Minneapolis, Minn.

Magnetic Grain Separators.

Absolutely perpetual, cheap, and sold on their merits after thirty days' trial. Awarded first prize at Cincinnati Exhibition by a committee of experts. Send for circulars.
WESTERN MAGNET CO., Delavan, Ill.



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HIGHEST TEST, 85% LOWEST, 82%
This water wheel is now admitted by the best mill owners to be
THE MOST PERFECT IN THE MARKET.
MARK! IT NEEDS NO PENSTOCK
And thereby saves its cost two times over, besides having it where it can be seen and got at.
The best and largest and richest mills have adopted it. 100 wheels sold in 1881, 200 sold in 1882, 400 will be sold in 1883. Just think of it, 300 wheels in two summers. It must be a good one to sell so fast. Send or elegant new book.
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LYE & ZIMERLE'S
IMPROVED
Anti Incrustation Compound!
For Steam Boilers is warranted to do all we claim for it—if used as per directions—viz: Stop formation of scales and gradually bring out the old; prevent foaming and gritty matter being carried into the cylinder to cause its cutting. It is second to none.
ALL STEAM USERS NEED IT.
Price reduced to 50 cents per gallon in barrels, half barrels and quarter barrels. Correspondence solicited and references furnished. Please give diameter and length of boiler, well or river water and kind of mineral as nearly as possible. Address,
LYE & ZIMERLE, Delphos, Ohio.

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CELEBRATED GOLD MEDAL
Crown Silk Anchor
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MIDDLINGS PURIFIER,
Has as much capacity and is warranted to do as much and as good work as the No. 0 machine of any other make.
It is fully Licensed under the Smith and all Conflicting Patents.
Send for new catalogue containing full particulars and names of users in almost every State and Territory.
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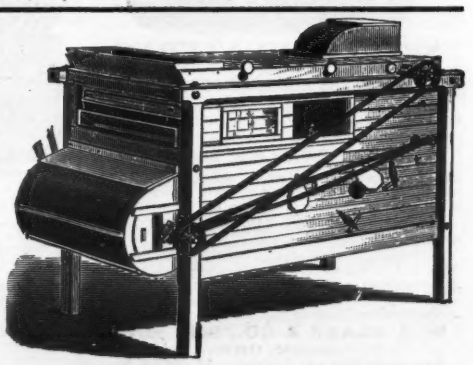

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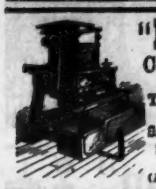
Free Book Jas. F. Hotchkiss 84 John St. N.Y.



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Corn-Mills and Millstones,
ALL SIZES.
THE BEST IN THE WORLD
FOR TABLE MEAL!
Samples of Meal Sent on Application.
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WHEAT HEATER!
Thoroughly and properly toughens the bran on the *hardest* or *driest* wheat; heats the wheat *evenly* and improves the flour and milling generally, as no other Heater in the market does. Send for Circular.
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PLATTEVILLE, WIS.

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IN EIGHT SIZES
THE UNIQUE
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STRICTLY FIRST CLASS,
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SPECIAL FEATURES.
SEAMLESS ROUNDED CORNERS.
No seams to burst; no corners to catch or clog; "takes" easily and delivers promptly—not liable to carry down the back leg.
Shovel-Edge, Curved Heel, Smooth Finish
and freedom from projecting seams, rivet heads, bands, etc., make it run easy, save power, reduce strain or wear and tear of belting, etc.
IT IS STRONG AND DURABLE,
Will outwear three or four hand-made buckets.
It meets the advanced ideas of the times successfully, and is nearer perfection in every respect than any other bucket made.
Leading millwrights recommend it, and the best informed millers approve and adopt it.
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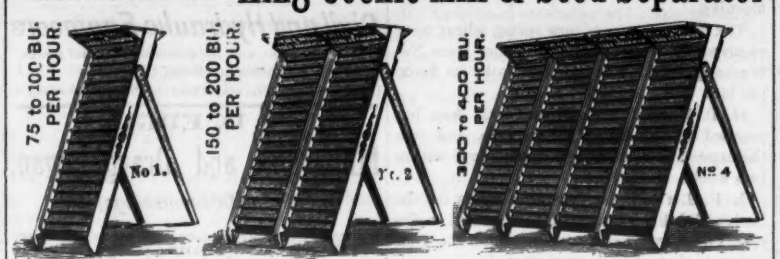
LA DU-KING MFG. CO.,
MANUFACTURERS OF THE
King Cockle Mill & Seed Separator



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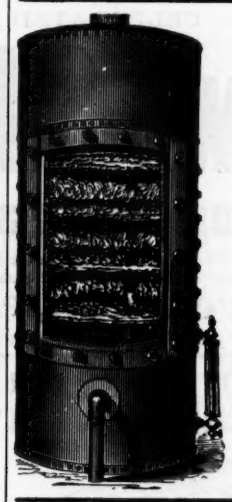

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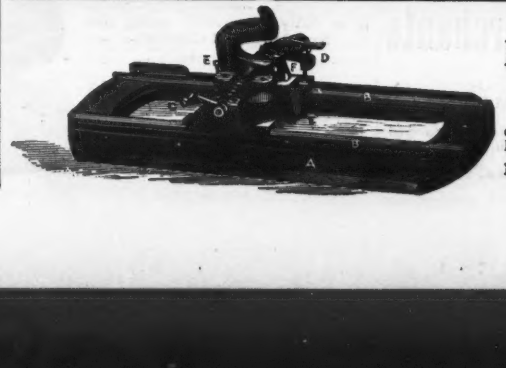

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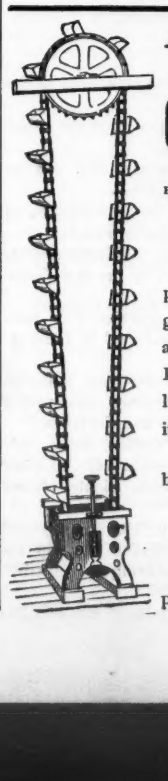
A tool for Cutting, Leveling and Polishing the Furrows and Face of millstones.
Received the Highest and only Award given for Polishers at the Millers' Exposition, Cincinnati, June, 1880.
For facing down high places on the buhr, this tool has no equal, and can be done much better and in one-sixth the time than with the mill pick. It is much larger, cuts better, can be used on either face or furrow; can be used until the corundum is entirely worn out on one side and then turned on the other side. Has over four times the amount of corundum, and when the corundum is worn out can be replaced in the handle at a small cost. Sent by express, $3.50. Satisfaction guaranteed or money refunded. Address
HORACE DEAL, Bucyrus, O.



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Recommended as a superior chain belting having greater wearing surface, and in connection with the Friction Roller, longer lived, than any similar belting.
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TRADE TALK.

This column is open to all regular subscribers to the Northwestern Miller, and all questions will be answered by competent practical millers at the publisher's expense. Unless signed by the editor, all matter published is given as the expression of individual opinion, for which the Northwestern Miller assumes no responsibility. Subscribers asking questions or criticising matter appearing here or elsewhere in the Northwestern Miller, may use initials or such signatures as they may select, but every letter must be accompanied by the full name of the writer, as only bona fide communications will be printed. The fullest criticism of anything and everything appearing in the paper, in this department or elsewhere, is invited.

Geo. Davis, Ottowa, Minn. "In a communication to your paper published Oct. 6, 1882, (Page 261.) I spoke of curing or sweating wheat and other cereals by a certain process, which was then only theory, shortly afterwards I instituted a plan to experiment upon it. The experiments have proven the theory correct in every particular, beyond my expectations or anticipations. Believing that the process was new and important I applied for a patent on it, and have just received notice that it has been allowed. To experiment upon it, I went to the expense of $1.50 for steam pipe, and put it up in about an hour. It proved effectual, sweating all the wheat I can clean. My first experiment was with Rio Grande wheat, grinding a quantity without sweating, then cleaning out the bolts, purifiers and all else, and grinding the sweated wheat and taking the flour of each and mixing it for bread, at the same time, with the same yeast, under the same conditions every way, baking it at the same time in the same oven; the result was more than 100 per cent in the quality of the bread in favor of the sweated wheat. I have continued to experiment upon it since last fall with all kinds of wheat that I could get hold of, with more or less success in every instance. The best results have becn obtained with the dryest wheat and more marked in the first part of the season; probably for the reason that the dry wheat had not been through the sweating process at all. At the psesent time wheat, that has been kept in a good storage place, does not show so great a difference in the quality of the bread. Once in a while, however, I find wheat that shows the same difference. My mill in which the experiments have been made is an old mill with only two runs of stone, two bolts not properly clothed and considerably patched, with two purifiers, also improperly clothed and patched so that I cannot properly dress up the material as it ought to be. The experiments show, however, that the process is correct. Flour made from wheat that has not been properly cured, I find by my experiments, no matter how white and pure when it is made into bread and becomes cold, will be dry and tasteless. The same wheat when cured properly and made into bread, will be much whiter, more moist and a great deal sweeter to the taste and I believe much more healthy to eat. In grinding I find a great difference in favor of the cured wheat. It grinds with much less power, less friction, no heat, no moisture in or about the curb, spouts, elevators, bolts or anywhere else. When the curb is taken up it is all dry, the spouts all clear, the gather boards to the chest have no flour sticking to them, and everything is much better every way. It seems to require more bolting capacity, and why, I cannot explain unless it be magnetic qualities of the particles, and yet the separations are more perfect, the bolt taking out more of the impurities; the flour at least being clearer and whiter. Grain once properly cured, there need be no fears of its keeping afterwards, in any reasonable receptacle, I believe that it can be shipped in any reasonable bulk and time, without danger of damage as the process eliminates that substance which causes it to heat. If an elevator or vessel is filled with grain, no matter how dry it may be (if it has not sweated), it is bound to do so if damp weather continues for a little while, especially in the hold of a vessel. Should it so sweat then is the proper time to thoroughly stir it, and it will rapidly and readily dry off and be all right. But it is not practical. It can't be examined properly in the first place. In an elevator it can be run from bin to bin if you only know its exact condition; not so on board of barges and vessels. If it is allowed to lay over about twenty-four hours after it gets thoroughly in the sweat it begins to sour and will soon become musty, and then there is no help for it. The same thing can be done with all cereals and herbs, some requiring more and some less time to lie. Some requiring to be repeated more or less times, then, it will sour before it is properly eliminated. I believe that my process is thorough and efficient to cure these evils, and that it will effectually take out whatever substance it is in cereals and herbs that is so detrimental to their keeping in bulk and thereby obtaining their real virtue. The process is so cheap and easy, costing almost nothing; no machinery of any kind to look after, only such as is already in use for handling wheat in every mill and elevator using steam; not requiring to be done in the mill, can be done in elevators before delivery and delivered to the mills at any time; can be done just as fast as mill or elevaror can handle it, absolutely requiring to be removed or thoroughly stirred in from eight to twenty-four hours after it is put into the sweat when it will readily and rapidly dry off and can be milled at any time thereafter. I am confident that there are many localities every year where wheat does not go through the sweating process during the whole season. In such localities I am confident it is necessery to put the wheat through a sweating proces in order to make good flour. It effectually toughens the woody fibres, causing them to cleave off more readily from the berry. I am also confident that the very hard wheats, such as rice wheat, and others that have been condemned, that will never sweat without being forced, may be made to produce good flour by this process. Such wheats are especially adapted to some localities. Should any of your numerous readers reside in any such locality and have such wheat on hand, I would like to have them put it through the same process and report the result. I have drawn this out at considerable length, hoping that it may bring out from some of your *expert* readers and writers something beneficial to the milling fraternity and through them to 'all the world as well as the rest of mankind.'"

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——, ——, Tenn. "Mill papers are not made for millers like us. They are more for the high toned fellows who don't have to handle bags, or to drive pigs away from the wagons or mill doors. But I reckon that we are just as good as they are, and may be some of us have just as much and just as good money. If we don't get the mill papers very often, we see a machine agent once in a while. I like to see them and hear them talk, but I am afraid of them. One of these men got me to put in about $50 worth of improvements year before last, and I never was able to do anything with it. He told me that it would only cost $25, but before we got through with it, I had put in fully $50, and I don't know but more. That is always the way; a thing will cost you two or three times as much as these fellows say every time. The last man that was down here wanted to sell me what he called centrifugal reels, and which I see pictures of in your paper. He said that it would improve my low grade $1.00 a barrel. I told him I did not make any low grade, and he was a good deal surprised; and he was a fancy looking fellow too, but a little light and weak on his pins. He finally talked to me so much about this reel, that I had to talk right out and tell him that I had two of as good reels as there was in the state, and that I would not buy any of his fancy wind-mill-looking-traps, from a man who could not set a stone. I told him that my mill was the best in the county, and that I was too old a bird to be caught in his traps, which were for nothing else but to get money out of. I was a school teacher in my early days, and will give you a piece sometime about some of these other machine men."

The San Francisco grain exchange committee has prepared a statement showing the wheat yield of the various countries of California the present year to be 53,000,000 bushels—an increase of 14,000,000 bushels over last year. The total barley yield this year is 15,000,000 bushels—an increase over last year of 2,500,000.

CHICAGO SCALE CO.
2 TON WAGON SCALE, $40. 3 TON, $50.
4 Ton $60, Beam Box Included.
240 lb. FARMER'S SCALE, $5.
The "Little Detective," ¼ oz. to 25 lb. $3.
300 OTHER SIZES. Reduced PRICE LIST FREE.
FORGES, TOOLS, &c.
BEST FORGE MADE FOR LIGHT WORK, $10.
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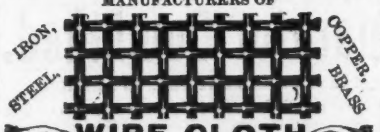

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51, Chamber of Commerce Building,
MILWAUKEE, - - WISCONSIN,
(ESTABLISHED 1860.)
Mr. C. J. Helliwell, after a visit of several months to this country, has now returned to Liverpool, England still better fitted than formerly to serve American Millers. The firm at Milwaukee will be pleased to receive samples and offers from millers, and to furnish any information in their power.

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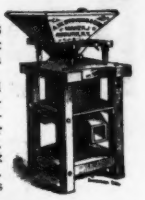
The cheapest and best mills in the world.
Prices, $80 and upwards, subject to cash discount. Send for circulars to A. W. Stevens & Son, Auburn, N. Y. Mention this paper.



A BARGAIN!
The following machinery will be sold at a bargain: One 25-inch right hand turbine water wheel; 1 30-inc right hand turbine water wheel; 1 30-inch left hand turbine water wheel; 1 36-inch right hand turbine water wheel; 1 40-inch left hand turbine water wheel; 3 No. 5 Smith purifiers. This machinery is in excellent order and will be sold at a sacrifice. Address,
PRAY MFG. CO.,
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C. A. SELEY.
CONSULTING ENGINEER.
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I am prepared to contract for engineering work as follows: Furnish and set up power plants, complete or in part, set up machinery, pumps, water works, etc., and take charge of repairs.
Stationary, locomotive and marine engines indicated and adjusted for highest economy and work. Will conduct fuel and engine tests; design engines and special machinery. General draughting and engineering.
If you are burning too much fuel; if you wish to increase your power without great expense; if you wish power measured for renting or experiments; in short, any item of engineering work will be promptly attended to. Work done under guarantee when desired. Correspondence solicited.

JOHN C. HIGGINS,
Manufacturer and dresser of
MILL PICKS
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Picks will be sent on 30 or 60 days' trial, to any responsible miller in the United States or Canada, and if not superior in every respect to any other pick made in this or any other country, there will be no charge, and I will pay all express charges to and from Chicago. All my picks are made of a special steel, which is *manufactured expressly for me* at Sheffield, England. My customers can thus be assured of a good article, and share with me the profits of direct importation. References furnished from every state and territory in the United States and Canada. Send for circular and price list.

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Calls the attention of mill owners and mill men generally to his unrivalled mode of manufacturing and dressing

MILL PICKS
After long experience in the business *Can guarantee perfect satisfaction.* A large assortment of picks on hand. All orders promptly attended to.
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BAKER GRADUAL REDUCTION DISKS

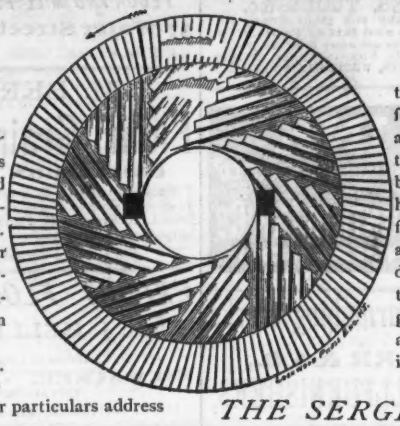
FROM

Holmes & Keeley.

ST. ANSGAR, Aug. 20,'83

Sergeant Mill Buhr Driver Co. Our breaks are working nicely and we are perfectly satisfied with the change. Were to build another mill would most certainly adopt the Baker gradual reduction system.

HOLMES & KEELEY.



FROM THE

Red Wing Mills.

After several years' trial of the Baker disks for breaking wheat, I am yet of the opinion that for the first three breaks nothing better has been devised; that for capacity, economy and quality of middlings made they excel the rolls and have much greater capacity than any double set of 30 inch rolls. Yours truly,

RED WING MILLS.

For circulars and other particulars address

SERGEANT'S BOW DRIVER AND BACK-LASH BALE,

allows the buhr to run true in or out of tram, which prevents "thumping" in starting, running or stopping; and drives the buhr perfectly true, forward or backward. Also,

Sergeant's Universal Driver

possesses all the advantages of the above, except that it does not permit the spindle to run so far out of tram as the bow-driver, but otherwise possesses all the advantages, and can be adjusted to any common bale or to any size eye and any runner; will run on any spindle without extra work of fitting or fitting-irons.

The Only Universal Driver Made!

To responsible parties thirty days' trial.

Send for circulars, price list, etc.

THE SERGEANT MILL BUHR DRIVER CO., MINNEAPOLIS, MINN.

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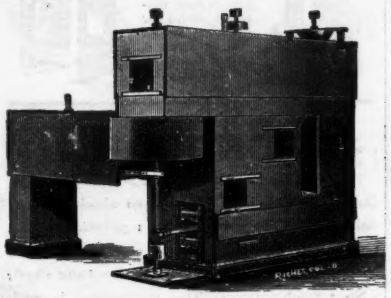
45 lbs. Flour. THAYER'S **60 lbs. Wheat.**

Pneumatic Middlings Purifier!



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ACKNOWLEDGED TO BE THE

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Why? Because the principles envolved are simple and practical, and adapted to custom mills as well as merchants, and brings (when our system is adopted) small mills in competition with merchant mills, and places them on an equal footing as to quantity and quality produced. Bolting cloths arranged to our system made to order and on liberal terms. For further information regarding our Bolt and Purifier, address

W. & N. THAYER & CO.,

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A WORD TO

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If you contemplate the purchase of a first-class Purifier, one that is meeting with unbounded success, we invite your attention to a view of the many advantages that can be obtained in the purchase of a Pneumatic Middlings Purifier:

1. It costs less than any other first-class purifier.
2. It takes less power to run it than any other purifier manufactured.
3. It is *no rattler*, being noiseless when in operation.
4. It agitates the middlings, making a separation of the coarse from the fine, by air alone, *purifying them separately on the same machine*, thereby saving granulation.
5. It embodies two Purifiers in one.
6. It has greater capacity than any other purifier made, according to size and space occupied.
7. It is the only purifier where the operator has perfect control of all the air currents by the use of valves.
8. It is the most simply constructed purifier in existence, avoiding all complications.
9. It has no conveyors or endless chains to get out of repair.
10. It has the best feed in the world, and is always ready when the miller is.

W. & N. THAYER & Co.,
Westerville, Franklin Co., Ohio, U. S. A.

Voluntary Testimony from Machines that Have Run Over 2 Years.

BEAVER FALLS, PA., July 24, 1883.

CASE MANUFACTURING CO., Columbus, Ohio.

Gentlemen:---There has been considerable inquiry of me as to how the Case machines wear, from millers who are not acquainted with them. My reply to them has been about as follows: "I have run my machines over two years, and more than half that time day and night, and I can not see any difference in their work from when they started. The wear is not perceptible yet." I make this statement to you because I believe I was the first miller that started a full line of your Rolls and Breaks, and the longer I run them the better I like them. Yours truly, MAC SHANER.

The above letter is a voluntary testimonial as to the merit and durability of our machines. It was unasked and unexpected by us. Mr. Shaner is using our Breaks, Rolls, Purifiers, Centrifugal Reels, Scalping Reels, etc.

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Millers visiting Chicago are requested to call on WM. E. CATLIN & CO., 57 South Canal Street, our Agents there.

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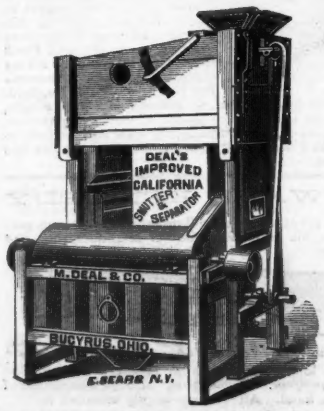

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